



CITY AND COUNTY OF NEWCASTLE UPON TYNE.



ANNUAL REPORT

OF THE

**MEDICAL OFFICER OF HEALTH**

ON THE

Sanitary Condition of the City

DURING THE YEAR

**1933.**









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Members of Council who served on the

# HEALTH COMMITTEE.

---

The Lord Mayor (Councillor JOHN LEADBITTER, J.P.)

Alderman DAVID ADAMS, J.P., Chairman.

Councillor WALTER THOMPSON, J.P. Vice-Chairman.

Alderman WALTER LEE, J.P.

„ J. CHAPMAN.

„ W. LOCKE, J.P. (Sheriff).

Councillor CATHERINE A. AULD, J.P. Councillor MAY NEWTON.

„ W. C. PERCIVAL, J.P.

„ J. E. SCANLAN. O.B.E.,  
J.P.

„ H. MOAT, Junr.

„ D. POLSON.

„ A. LOUVRE.

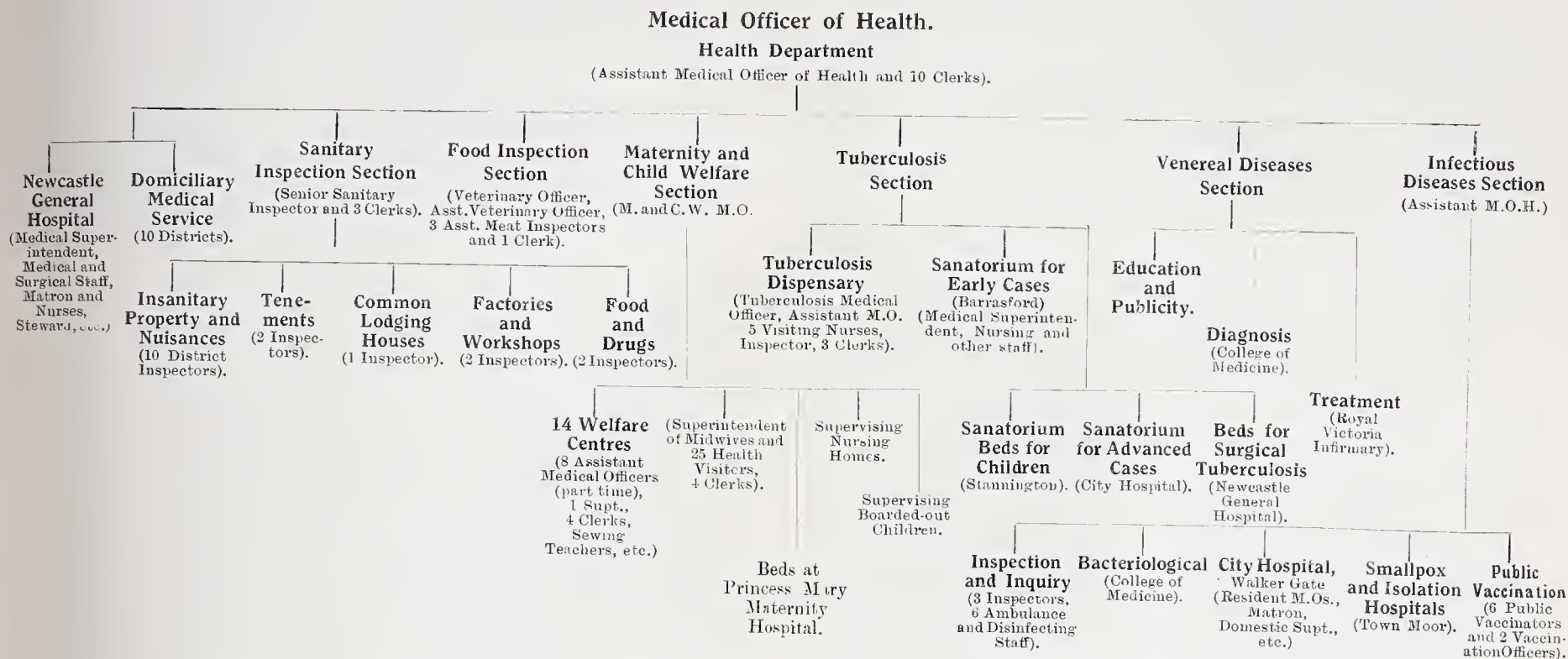
„ A. E. ROGERS.

„ J. PEARSON, J.P.


„ R. M. ROWE.



Table showing the various Sections of the Health Committee's work which is under the direct charge of the Medical Officer of Health







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\*Councillor CATHERINE A. AULD, J.P., Vice-Chairman.

\*Councillor WALTER THOMPSON, J.P.      †Dr. R. P. RANKEN LYLE, J.P.

\*            D. POLSON.            †Mrs. E. I. LEACH.

\*       ,,       MAY NEWTON.                   †       ,,       CATH. A. LOCKE.

\* „ A. E. ROGERS.

† Co-opted member.

† Appointed by City Council.



## STAFF.

---

**J. A. CHARLES**, M.D., B.S., M.R.C.P., D.P.H., Medical Officer of Health and Medical Superintendent of the City Hospitals for Infectious Diseases.

**E. F. DAWSON-WALKER**, M.D., B.S., B.HY., D.P.H., Assistant Medical Officer of Health (appointed March, 1933).

**CHRISTOPHER RAIMES**, Senior Sanitary Inspector.

**JAS. McNICHOL**, Chief Assistant Inspector and Assistant Workshops Inspector.

**ISAAC CLARK**, Assistant Workshops Inspector.

**JAS. HUNTER** and **A. KIRSOP**, Assistant Inspectors under the Food and Drugs Acts.

**W. F. BACON**, **JAS. McKENDRY**, **L. W. JOHNSON**, ‡**WM. GRAY**, **WM. E. PERKINS**, **J. BROWN**, ‡**W. STEWART**, **M. SWALES**, **A. FRENCH**, **W. A. PILSON**, **H. W. GRIEVES**, District Inspectors.

‡**F. GALTON**, **L. WADE**, Tenement Inspectors.

‡ Slum Clearance Inspectors (April).

**ADAM FLOCKHART**, Assistant Inspector of Common Lodging Houses.

**WM. BEAN**, **A. IBBITSON**, **R. S. COOPER** (Temp. August, 1933), Infectious Diseases Inspectors.

**JAS. ROBSON**, **JAS. BRUCE**, **JNO. R. CRAGIE**, **J. W. ROBSON**, **THOS. MOORE**, **J. ROBSON, Jun.**, Ambulance Drivers and Disinfectors.

**WM. MILNE** (Retired Feb.), \***ALFRED HEDLEY**, M.S.M., \***GEO. CUTHBERTSON**, \***ALEC. M. WALKER**, **JOS. GILHESPY**, **H. G. OLIVER**, \***ROBT. LAWSON**, \***D. H. MACPHERSON**, \***R. DOBBIN**, **H. G. COATES**, \***F. PELLATT**, **L. SMALLEY**, **R. HALL**, (Commenced Feb. 1933), **IVY GOODHALL** (Typist), Clerks in the Health Department.

Those marked \* hold the Sanitary Inspector's Certificate of the Royal Sanitary Institute.

**THOS. PARKER**, F.R.C.V.S., Veterinary Officer and Inspector of Provisions,

**H. THORNTON**, M.R.C.V.S., B.V.SC., D.V.H., Assistant Veterinary Inspector.

**JAS. M. ANDERSON**, **W. COCKBURN**, **GEO. PHILLIPS**, Assistant Inspectors of Provisions. \***NORMAN DICKSON**, Clerk.

**A. F. G. SPINKS**, M.D., Maternity and Child Welfare Medical Officer.

**a** **GEORGINA B. CAMERON**, M.B.E.\*, Chief Health Visitor and Supt. of Midwives.

**f** **CATHERINE M. THEXTON**†, **b** **MARION MOODY**\*, **c** **LIZZIE ISA PRITCHARD**, **c** **LOUISE SHELL**, **d** **FLORENCE MARTHA HATFIELD**\*, **d** **NORAH B. WILLSON**\*, **b** **E. HISCO**\*, **b** **E. JOHNSON**\*, **b** **N. E. CARR**\*, **b** **T. MASON**\*, **b** **E. M. HASTIE**\*, **b** **C. R. WORRALL**\*, **b** **N. LEWIS**\*, **b** **M. A. SIMPSON**\*, **b** **N. THOMPSON**\*, **g** **C. N. PHILLIPS**, **b** **D. A. ATKINSON**, **b** **M. BATTY**, **b** **A. CRAGGS**, **b** **M. W. LAING**, **b** **P. E. PEARSE**, **b** **R. ROXBY**, **b** **M. SCORER**, **b** **E. G. SAYER**, **b** **L. YOUELL**, Health Visitors. **EDITH ROGERS**, **AMY RODGERS**, **MARION S. BATT**, **ALICE FENWICK**, Clerks.

(Qualifications of those marked **a** C.M.B., General and Fever Nursing and R.S.I. Certificates. **b** C.M.B., General Nursing and R.S.I. **c** C.M.B. and R.S.I. **d** C.M.B. and General Nursing. **f** C.M.B., Fever Nursing and R.S.I. **g** C.M.B.).

\* State Registered Nurse. † State Registered Fever Nurse.

**ANNIE G. BAINBRIDGE**, Superintendent of Welfare Centres.

**GLADYS PATTISON**, **IRENE GAWMAN**, **CATH. BARNES**, **MARY E. MUSE**, Clerks.



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 L. MABEL R. CAMPBELL, M.B., Ch.B.  
 H. HARVEY EVERS, M.B., F.R.C.S.  
 OLGA ALCOCK, M.B., B.S.  
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Assistant Medical Officers (part  
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**c** CONSTANCE M. BAYNE, **d** ANNIE BOOTH, **a** W. E. DALE\*, **b** J. P. KENMIR\*, **e** M. YOUNG, Tuberculosis Visiting Nurses.

(Qualifications of those marked **a** General Nursing. **b** General Nursing, C.M.B. and R.S.I.  
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\* State Registered Nurse.

**A. TAYLOR**, Assistant Inspector (resigned June, 1933), **R. G. SUDDICK** (appointed July, 1933).

**GEO. MAGNAY**, **GERTRUDE GILLENDER**, **M. PRINGLE**, Clerks.

#### BARRASFORD SANATORIUM.

**C. G. R. GOODWIN**, M.R.C.S., L.R.C.P., Medical Superintendent.

**FRANCES BAGULEY**, A.R.R.C., Matron. Sister, Nurses, Servants.

#### CITY HOSPITAL FOR INFECTIOUS DISEASES.

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**W. ALCOCK**, M.B., Ch.B., D.P.H., B.Hy., Resident Medical Assistant (appointed June, 1933).

**W. FRANK WILSON**, M.B., B.S., Consulting Oto-Rhinologist.

**J. L. WATT**, Matron.

**A. M. STEEDE**, Domestic Superintendent (resigned March, 1933).

**J. K. ROSS**, Domestic Superintendent (appointed April, 1933),

**JESSIE LAING**, Assistant Matron. Sisters, Nurses, Clerks, Domestic Staff.

**M. BURRILL**, Dispenser.

**GEO. COCKBURN**, Engineer.

**J. SAUNDERSON**, Assistant Engineer.

Lodge Keepers, Firemen, Porters, Gardeners, Joiner and Handyman.

#### SMALLPOX AND ISOLATION HOSPITALS.

**Jos. W. and JANE STEPHENSON**, **MATTHEW and ISABELLA ROBSON**, Care-takers.



**NEWCASTLE GENERAL HOSPITAL.**

**G. P. HARLAN**, M.D., Ch.B., B.Hy., D.P.H., Medical Superintendent.

**G. F. DUGGAN**, M.B., B.Ch., M.A.O., F.R.C.S. (Edin.), Deputy Medical Superintendent.

**JAMES COOK**, L.R.C.P. (Edin.), F.R.C.S. (Edin.), B.Hy., D.P.H., Resident House Physician.

**JUNIOR RESIDENT HOUSE PHYSICIANS AND SURGEONS (5).**

**A. BARON**, Matron.

**S. LAKE** and **M. C. TAYLOR**, Assistant Matrons. Sisters, Nurses, Domestic Staff.

**N. H. HERDMAN**, Dispenser.

**JAMES MATTHEWS**, Steward. Ambulance Drivers, Porters, Male Nurses, Clerks.

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**DISTRICT MEDICAL OFFICERS.**

\***DR. R. L. BELL**, \***DR. J. MACRAE** (2 Districts), \***DR. E. P. TUILOH** (2 Districts), **DR. W. SIMPSON**, **DR. R. W. NEVIN**, **DR. W. T. HALL**, **DR. T. J. RYAN**, \***DR. J. B. SINSON**.

\*As from 8th November, 1933, these six districts were included in the new scheme.

**PUBLIC VACCINATORS AND VACCINATION OFFICERS.**

**DR. J. MACRAE**, **DR. RICHARD DAGGER**, **DR. T. J. RYAN**, **DR. H. R. SMITH**, **DR. A. M. PATERSON**, **DR. G. D. NEWTON** (resigned October, 1933), **DR. J. B. SINSON** (appointed temporary October, 1933), **DR. G. P. HARLAN** (Newcastle General Hospital).

**VACCINATION OFFICERS—EASTERN DISTRICT—W. H. F. GARRETT.**

**WESTERN DISTRICT—W. W. CUMMINGS.**



**To Alderman DAVID ADAMS, J.P., Chairman of the  
Health Committee of the Corporation of Newcastle  
upon Tyne.**

SIR,

I have the honour to present the sixty-first Annual Report of the Medical Officer of Health on the Sanitary Condition of the City.

The usual details as to the work of the various sections of the Health Department are set out and described in the body of the report by the officers directly responsible. These introductory remarks will serve their purpose if they direct attention to the main features of the year 1933 in so far as the health of the City was concerned, and indicate the tendencies, events, and needs of the times.

*Vital Statistics.*

First amongst the tendencies so referred to is the steadily declining Birth Rate. The previous low record of 17.1 births per 1,000 of the population, which had been established in 1932 was surpassed in 1933, when the rate fell to 16.4 per 1,000. This is the third successive year to register a decline, yet the local rate still exceeds the national birth rate of 14.4 per 1,000, and is higher than the average experienced by the 118 Great Towns.

The recorded Death Rate for the City at 12.7 per 1,000 of the population is somewhat higher than in the preceding year, but is yet within measurable distance of the national figure of 12.3 per 1,000.

Only in respect of the Infantile Mortality Rate is there any serious disparity between the records of the City and of the country as a whole. The Infantile Mortality Rate for England and Wales in 1933 was 64 per 1,000 live births. The Newcastle figure of 76 per 1,000 births, though actually the second lowest City rate recorded, yet leaves it imperatively obvious that there can be no slackening of our endeavours in the saving of infant lives. Nevertheless, at a time when the financial resources of our population have been subjected to such great depletion, it is a matter for congratulation that the effect of this has been so little reflected in the mortality of the youngest section of our population.

But that there is malnutrition in our midst, to the promotion of which these economic conditions have undoubtedly contributed, is made clear and evident from the investigation carried out by Dr. J. C. Spence into the health and nutrition of certain of the



city children. Further reference is made to this survey on a subsequent page.

The five chief causes of death in order of importance were :—

	Death Rate per 1,000 Population.	Percentage of Total Deaths.
(1) Diseases of the heart.....	2.47	19.4
(2) Cancer .....	1.41	11.1
(3) Bronchitis and pneumonia...	1.14	9.0
(4) Diseases of the veins and arteries .....	1.04	8.2
(5) Pulmonary tuberculosis.....	0.91	7.2

There has been one change since 1932 in this ranking, diseases of the veins and arteries having displaced pulmonary tuberculosis from the fourth position. Inasmuch as diseases of the heart and diseases of the veins and arteries are but separate elements of that great group of pathological conditions which we know as diseases of the circulatory system, it is significant to realise that together they are now responsible for 27.6 per cent. of our total mortality. It is impossible to assess what proportion of these notified deaths are due to a better appreciation of the signs and symptoms of the causal conditions, or to what extent the all-pervading though often insensible strain of the life of to-day is responsible. That more than quarter of the whole population living at all ages should ultimately die of some form of circulatory disease is a phenomenon worthy of more attention than it at present receives.

#### *Infectious Diseases.*

Turning to the diseases which we definitely know to be spread by infection, pulmonary tuberculosis has yielded fewer deaths than in 1932. In fact, the total of 262 deaths from this disease is lower than in any previous year of which we have record. The number of definite new cases discovered remains virtually stationary—428 having been notified in 1933 as compared with 432 in 1932. But it would be premature to congratulate ourselves that pulmonary tuberculosis is no longer one of the black-spots on our sanitary escutcheon. The Newcastle death rate from the disease is still approximately 40 per cent. higher than the national average. This fact can be best seen from Table I. (page 15) in which are contrasted a number of the average death rates of England and Wales and Newcastle during the six year period 1927-1932. The classification adopted is based upon the Registrar-General's Abridged List of Causes of Death.



TABLE I.

*Average Death Rates per 100,000 in England and Wales and Newcastle-upon-Tyne during the Six Year Period 1927-1932. (Based upon the Registrar-General's Abridged List of Causes of Death.)*

No.		England and Wales.	Newcastle upon Tyne.	Newcastle as a percentage of England and Wales.
	All causes... ..	1,220	1,294.2	106.1
	*Infantile mortality ... ..	66.7	82.8	124.1
1.	Typhoid and paratyphoid fevers ...	0.85	0.9	105.9
2.	Measles ... ..	9.3	19.0	<b>204.3</b>
3.	Scarlet fever ... ..	1.5	1.8	120.0
4.	Whooping cough... ..	8.7	12.2	<b>140.2</b>
5.	Diphtheria ... ..	7.5	2.9	38.7
6.	Influenza ... ..	38.5	27.5	71.4
7.	Encephalitis lethargica ... ..	2.5	3.3	<b>132.0</b>
8.	Cerebro-spinal fever ... ..	2.0	4.9	<b>245.0</b>
9.	Tuberculosis of respiratory system ...	75.2	105.7	<b>140.6</b>
10.	Other tuberculous diseases ... ..	24.7	26.5	107.3
11.	Syphilis ... ..	3.5	6.9	<b>197.1</b>
12.	General paralysis of the insane, tabes dorsalis ... ..	5.2	7.3	<b>140.4</b>
13.	Cancer, malignant disease ... ..	144.7	137.5	95.0
14.	Diabetes ... ..	13.9	13.2	94.9
15.	Cerebral hæmorrhage, etc. ... ..	66.6	54.7	82.1
16.	Heart disease ... ..	226.3	215.8	95.4
17.	Aneurysm... ..	3.2	3.5	109.4
18.	Other circulatory diseases ... ..	60.3	93.9	<b>155.7</b>
19.	Bronchitis... ..	65.0	66.4	102.2
20.	Pneumonia (all forms) ... ..	85.2	100.0	117.4
21.	Other respiratory diseases ... ..	13.4	13.9	103.7
22.	Peptic ulcer ... ..	10.2	10.9	106.9
23.	Diarrhœa, etc. (under 2 years) ...	15.2	27.5	<b>180.9</b>
24.	Appendicitis ... ..	7.2	5.6	77.8
25.	Cirrhosis of liver... ..	4.3	3.0	69.8
26.	Other diseases of liver, etc. ... ..	6.2	7.5	120.9
27.	Other digestive diseases ... ..	†	†	†
28.	Acute and chronic nephritis ... ..	38.7	43.3	111.9
29.	*Puerperal sepsis ... ..	1.7	1.6	94.1
30.	*Other puerperal causes... ..	2.5	2.4	96.0
31.	*Congenital debility, premature birth, etc. ... ..	32.5	29.7	91.4
32.	Senility ... ..	49.6	31.0	62.5
33.	Suicide ... ..	12.9	11.7	90.7
34.	Other violence ... ..	41.6	39.4	94.7
35.	Other defined causes ... ..	†	†	†
36.	Causes ill-defined or unknown ...	†	†	†

\* The rates for these headings are per 1,000 live-births.

† Not extracted.

Death rates which are equivalent to 125 per cent. or more of the similar rates for England and Wales are indicated in heavier type.



Of the other infectious diseases, measles and scarlet fever were the most prevalent, the latter reaching epidemic dimensions greater than had been known for fifty years. But whereas in 1884 one hundred and fifty-six deaths occurred from scarlet fever amongst 2,167 patients, in 1933 there were only 18 fatal cases in the 2,034 notified.

Measles and whooping cough were responsible for 37 and 25 deaths respectively, but in both instances the case-mortality rate was low. Cerebro-spinal fever with 26 deaths amongst 51 cases was by far the most serious infectious disease encountered.

Though dysentery is still to be found here and there amongst the community, and would appear to have established a claim to be regarded as an endemic disease in the City, there have been no outbreaks of the other intestinal infectious disease, typhoid, or paratyphoid fever, such as have appeared from time to time in neighbouring county districts.

#### *Nutrition.*

Thirty years ago at this stage of the commentary the Medical Officer of Health would have considered his task to be more or less half accomplished. There would have remained to be written a few paragraphs dealing in sequence with the difficulties experienced in effecting any improvement in the housing of the working-classes; the deplorable condition of certain of the factories and workshops, and the work of the Department in administering the laws relating to food and drugs. Thereafter the report would have been regarded as complete, and any supplementary observations would have been extraordinary and unusual. To-day it is only possible in this letter to touch upon one or two of the manifold activities of the Department. These relate to matters which, in the old days, were definitely outside the jurisdiction and influence of the Health Committee and its officers. Prior to the War no one would have considered the subject of the nutrition of the community as coming within the purview of the Health Authority. In these days there is hardly any matter which is of greater concern.

#### *Dr. Spence's investigation and report as to the health and nutrition of certain children.*

These problems of the nutritional needs of the population were first brought to notice in the Annual Reports of the Newcastle Dispensary for the years 1931 and 1932. Influenced by the



opinions therein expressed, the Committee in the summer of 1933 charged Dr. J. C. Spence with the responsibility of conducting an independent enquiry into the health and nutrition of certain pre-school children from working-class homes in the City. This investigation, limited though it might be in extent, was nevertheless truly directed, and its lessons will be of enormous assistance in indicating the lines which must be followed if we are to improve the physical state of the younger members of the community.

Dr. Spence's report is republished with this letter (Appendix A.), but it is fitting that his first and main conclusion should be set out here in his own words :—

“ . . . . at least 36.0 per cent. of the children from the poor districts of the City which I have examined were unhealthy or physically unfit, and as a result of this they appeared malnourished.”

The findings of this investigation, though widely reviewed, have received relatively little adverse criticism. Such as has been made known has concerned the admittedly small scope of the enquiry, or has related to the definition of the words “ malnourished ” and “ malnutrition.” It is only fair to say that the word “ malnutrition ” was used by Dr. Spence to signify “ imperfect ” or “ defective ” rather than “ insufficient ” or “ inadequate ” nutrition.

For similar reasons no use was made of the alternative expressions “ under-nourished ” or “ under-nutrition ” as it was felt that they might suggest what was true only in a few exceptional cases, namely, that the children were suffering from actual lack of food. Despite these criticisms there can be no question that the survey has been of inestimable value to the Health and Maternity and Child Welfare Committees in the discharge of their statutory duties.

But Dr. Spence's report, though by far the most important, is not the only example of the interest shown by the Health Committee and Department in these questions of nutrition.

*Other local investigations—family budgets—dietary studies.*

Early in 1933 it became obvious that the generalisations and assumptions then prevailing as to the economic conditions of unemployed families required to be tested and corroborated by investigation and enquiry into typical cases. Accordingly steps



were taken to collect a number of family budgets—not only for single weeks but also for longer periods. The accuracy of these may not be sufficient for the scientific economist, but at any rate they afford an indication of the actual financial circumstances under which many families in the City were existing at the time. As a matter of general and historical interest a number of these budgets have been tabulated in Appendix B. (pages 33-38).

At a later date, largely as a result of the suggestions and encouragement of Dr. H. E. Magee of the Ministry of Health, an investigation of a more ambitious character was undertaken by the Chief Health Visitor, Miss G. B. Cameron, her senior clerk, Miss E. Rodgers, and other members of the Health Visitor staff.

During this survey the dietaries of two groups of working-class families of varying sizes—unemployed and employed respectively—were measured and recorded. From the data thus collected there was subsequently obtained by analysis and calculation the constituent quantities of proteins, fats and carbohydrates. The calorie equivalent and the cost in cash of these diets per “man value” were also ascertained for each family. The complete details for the fifteen unemployed families investigated are recorded in Table II. (page 19), with which can be compared Table III. (page 20) wherein is set out the same information in respect of nine employed families.

A careful study of the two tables shows individual variation of marked degree between the two groups and even within the confines of the same group. For example, unemployed family No. 5 was able to spend during the week 7s. 6.1d on food per man value, which was nearly 11d. per head more than any other family in the same series, and exceeded the average weekly expenditure by no less a sum than 3s. 0.3d. But in the same group of unemployed families was one (No. 11) which could only spare 2s. 11.9d. per man value for food—an amount which purchased little more than half the standard quantities of protein and fat, and barely 70 per cent. of the accepted ration of carbohydrate.



TABLE II.  
CITY AND COUNTY OF NEWCASTLE UPON TYNE.  
ABSTRACT OF HEALTH VISITORS' INVESTIGATIONS RE FOOD PER MAN VALUE IN FIFTEEN  
**UNEMPLOYED** FAMILIES—JANUARY, 1934.

Serial Number.	No. of Children.	Man Value.	Protein.		Fat.	Carbo-hydrate.	Calories.	Amount spent on Food			Total Income.	Remarks.
			No. 1.	No. 2.				Total per week.	Per Man Value per week.			
			grams.	grams.	grams.	grams.		£ s. d.	£ s. d.	£ s. d.		
1	2	2.73	32.3	49.1	110.2	467.4	3274	0 14 2	0 5 2.3	1 7 3		
2	2	2.63	17.7	33.1	85.7	349.1	2435	0 13 6	0 5 1.6	1 7 3		
3	3	3.03	38.8	59.3	128.8	567.5	3926	1 0 0	0 6 7.2	1 9 3		
4	3	3.23	47.1	94.5	114.3	425.4	3388	1 0 11	0 6 5.7	1 9 3		
5	3	3.13	46.4	68.4	139.7	610.6	4273	1 3 6	0 7 6.1	1 18 3		
6	3	3.43	17.6	57.5	108.3	514.2	3421	0 17 1	0 4 11.8	1 9 3		
7	3	3.43	24.2	39.2	122.5	329.6	2750	0 14 10	0 4 3.9	1 15 3		
8	3	2.93	21.9	47.6	92.5	431.4	2915	0 14 8	0 5 0.1	1 4 5		1 Adult (widow).
9	4	4.43	19.1	37.1	79.4	351.2	2408	0 16 9	0 3 9.4	1 11 0		
10	4	4.83	11.0	40.4	71.0	372.4	2398	0 16 6	0 3 5.0	1 13 8		
11	4	4.23	17.8	37.1	51.9	349.7	2142	0 12 8	0 2 11.9	1 11 3		
12	5	5.63	24.9	46.0	73.9	395.7	2601	0 19 0	0 3 4.5	2 0 6		
13	5	5.73	20.7	53.2	63.0	484.1	2874	1 0 5	0 3 6.8	1 17 11		3 Adults.
14	5	4.73	18.8	39.9	76.8	397.7	2585	0 16 9	0 3 6.5	1 17 9		
15	6	5.73	24.5	54.4	96.3	540.5	3435	1 7 5	0 4 9.4	2 0 0		Boy 16 years.
Daily Total		59.85	1458.4	2972.0	5392.7	26,169.0	175,608					
Average Per Man Value			24.4	49.7	90.1	437.2	2934					
								Average cost 4s. 5.8d. per week per Man Value.				

NOTE.—This table is based upon the total quantity of food purchased; no allowance has been made for waste.



TABLE III.  
ABSTRACT OF HEALTH VISITORS' INVESTIGATIONS RE FOOD PER MAN VALUE IN NINE  
EMPLOYED FAMILIES.—JANUARY, 1934.

Serial Number.	No. of Children.	Man Value.	Protein.		Fat. grams.	Carbo- hydrate. grams.	Calories.	Amount spent on Food		Total Income.	Remarks.
			No. 1. grams.	No. 2. grams.				Total per week. £ s. d.	Per Man Value per week. £ s. d.		
1	1	3.33	43.4	46.3	150.8	504.0	3837	1 7 6	0 8 3.1	£ s. d. 2 16 0	3 Adults.
2	1	2.33	54.7	49.9	145.2	477.3	3738	1 2 6½	0 9 8.1	2 16 0	
3	2	2.83	54.4	56.9	134.9	523.1	3856	1 7 8	0 9 9.3	2 13 6	
4	2	3.13	33.1	44.4	118.6	437.7	3215	1 2 11½	0 7 4.0	2 7 7	3 Adults. (Father commenced work after 10 years' unemployment.
5	3	4.53	32.1	78.6	108.2	691.1	4293	1 2 0	0 4 10.3	2 12 0	
6	4	4.33	41.4	57.1	103.8	507.4	3450	1 6 10	0 6 2.4	2 3 2	
7	5	5.46	25.9	64.4	102.7	608.0	3818	1 9 4½	0 5 4.6	2 13 6	Girl aged 15 years. 4 Adults.
8	6	7.43	27.5	43.8	87.6	434.1	2887	1 12 0	0 4 3.7	3 4 10	
9	6	5.53	21.8	55.9	94.8	510.9	3295	1 5 1½	0 4 6.5	2 4 0	
Daily Total		38.9	1321.2	2159.7	4269.2	20,339.0	137367				
Average Per Man Value...			34.0	55.5	109.7	522.9	3531	Average cost 6s. 0.8d. per Man Value per week.			
<i>Comparison:—</i>											
Unemployed ...			24.4	49.7	90.1	437.2	2934	"	"	4s. 5.8d.	"
Difference ...			9.6	5.9	19.6	85.6	597	"	"	1s. 7d.	"

NOTE.—This table is based upon the total quantity of food purchased; no allowance has been made for waste.



Even amongst employed families there are obvious instances where the diet purchased is inadequate. In the case of family No. 8, which consisted of four adults and six children, the amount spent on food per man value, namely, 4s 3.7d. was less than the unemployed average of 4s. 5.8d.

The general conclusions to be drawn from the detailed information contained in the two tables may be summarised as follows :—

- (1) The amount spent weekly on food per man value in the fifteen households of the unemployed averaged 4s. 5.8d. In the employed families the average weekly cost of the dietary was 6s. 0.8d. At the time when the data was collected (*i.e.*, January, 1934), the cost in Newcastle of the British Medical Association ration of 3,400 calories, and of a diet based on the Ministry of Health standard (3,000 calories) would have been 5s. 7½d. and 5s. 1½d. respectively.
- (2) Accepting the constituents of a normal diet yielding 3,400 calories per diem as being made up of 100 grams of protein, 100 grams of fat, and 500 grams of carbohydrate, the following table (Table IV.) shows the respective deficiencies and excesses of the average unemployed and employed diets.

TABLE IV.

	PROTEIN.	Percentage Deficiency or Excess compared with Standard.	FAT.	Percentage Deficiency or Excess compared with Standard.	CARBO- HYDRATE.	Percentage Deficiency or Excess compared with Standard.	TOTAL CALORIES.	Percentage Deficiency or Excess compared with Standard.
	grams.		grams.		grams.			
Standard Daily Diet	100	...	100	...	500	...	3,400	...
Average Un- employed Daily Diet (15 families)	74.0	—26.0	90.1	—9.9	437.2	—12.6	2,934	—13.7
Average Employed Daily Diet (9 families)	89.5	—10.5	109.7	+9.7	522.9	+4.6	3,531	+3.8

It will be observed that there are deficiencies in every single item in the diets of the unemployed, the most noteworthy being the deficiency in protein. If the analysis is carried further it will be found that the first-class or animal



protein is that which is most lacking—the average daily consumption in this particular group of unemployed families being 24.4 grams of first-class protein daily or approximately six-sevenths of an ounce.

The number of families studied is unquestionably small, and it would be unwise to base any sweeping generalisations on the results. Nevertheless, the general trend of the enquiry is sufficiently obvious for special steps to be taken to keep in touch with the situation. In these circumstances it is gratifying to record that the Health Committee has provided for the continuation of the investigation during the Autumn of 1934.

*Provision of Domiciliary Medical Services for persons in receipt of Public Assistance.*

On the 8th of November the new scheme for the provision of Domiciliary Medical Services was introduced in six of the ten medical relief districts of the City, and the consequent transfer of 893 patients was carried through without a hitch.

This modification of the old time-honoured arrangements which dated from 1837, was first brought to the notice of the Health Committee in 1930, and owed its inception to Dr. Harold Kerr and the then Chairman of the Committee, Dr. R. W. Simpson.

During the three years which elapsed before the plan was finally brought into operation there were frequent and prolonged consultations and discussions with the Ministry of Health, whereby, one by one, the many legal difficulties were resolved and removed. Newcastle can claim priority for the idea of adapting the system of free choice of doctor to the medical treatment of the sick poor, and for the preparation of a practicable scheme for bringing this about, but the honour attaching to the first introduction of such a system must be given to the County Borough of East Ham, and the County of Wiltshire, which anticipated this City by the matter of a few weeks.

The Newcastle scheme provides that in certain relief districts a publicly assisted person who requires medical attention can obtain it from any one of a number of medical men who have undertaken to serve on a panel for this purpose. The patient receives advice and treatment from the practitioner of his choice, but his medicines and other necessary remedies are procured on presentation of his doctor's prescription at one of the municipal dispensaries which have been established at the Newcastle General



Hospital and the Newcastle Dispensary. The doctor, in his turn, is remunerated from a pool of £1,200, which is shared by the practitioners on the Health Committee panel in proportion to the services rendered. A simple form record card is kept by the doctor and from this his remuneration is calculated. As regards the prescription of medicines he employs the National Formulary, which is used by the National Health Insurance Services.

It is inevitable that this new method of providing the sick poor with medical treatment will prove more costly than the previous arrangements. But the other difficulties and doubts which beset the minds of those interested in this experiment have gradually disappeared. The individual members of the panel of practitioners have shown themselves willing to acquire that knowledge of poor law administration which is necessary for the District Medical Officer, and in the exercise of their duties they have laboured diligently and well.

It must not be imagined that service on the panel of the Joint Medical Relief District, which was formed by combining the six vacant districts to which the scheme applies, is a remunerative business. The general state of health of the population and the presence of a number of minor epidemics make it probable that the pool of £1,200 will yield a somewhat inadequate return for the labours of those participating.

From the point of view of the patient there has been nothing but gain. He or she is now entitled to the doctor of their choice. In many cases the acceptance of Public Assistance does not entail the severance of the long-standing tie with the family doctor, for the latter is probably a member of the new panel. Any medicine or special treatment necessary is prescribed by the doctor, and is of the same standard and quality as that given to National Health Insurance patients. Some little inconvenience may arise because there are only two dispensaries available, but any complaints on this head are offset by the genuine appreciation of the "real medicine" which is issued.

As yet it is too early to give any details of work done or costs incurred, but these will be submitted to the Health Committee and City Council at the conclusion of the experimental period of one year. There is every reason to believe that when this is done the new services will be found to have more than justified themselves.



*General Hospital Services.*

The foregoing description of the new arrangements for the provision of Domiciliary Medical Services leads inevitably to a review of the facilities now available at the Newcastle General Hospital.

It will be remembered that this hospital was transferred from the Board of Guardians on April 1st, 1930, and that it has now been administered by the Health Committee for a period of approximately four years.

A number of schemes for the improvement of the hospital had been held in abeyance by the Guardians pending the transfer, and to these, now happily carried into effect, the Health Committee has added developments of its own.

The alterations and additions have concerned not only the structure and fabric of the hospital, but the personnel as well.

In the category of structural improvements must be included the complete reconditioning of the ward sanitary arrangements, the extensive replacement of old floors by new, the remodelling of the electric lighting of the wards, and the modernisation of the telephone system. These represent the main items, but a number of minor matters have also received attention. From the medical and scientific aspects the establishment of a small biochemical laboratory, and the allocation of accommodation to Mr. S. F. Evans, M.Sc., of Armstrong College, for the carrying out of research into the production of fever by high frequency waves, have been events of the highest importance.

In the matter of personnel, the needs of the hospital were wisely anticipated in the original report of the Parliamentary Committee to the City Council relative to the transfer of functions from the Board of Guardians. The Nursing Staff now numbers 159 as compared with 117 at the end of 1929, and its further increase is a matter of urgent need. But perhaps the most outstanding evidence of prudent forethought is to be found in the establishment and constitution of the consultant staff.

The provision made by the City Council, largely on the recommendation of Dr. Kerr, has proved to be so comprehensive that no other municipal hospital in the country, apart from certain institutions under the control of the London County Council, can boast a body of specialists more highly qualified or widely recognised.



Certain of the more recent developments of the hospital require an additional word of comment. It is perhaps not sufficiently known that the consultant staff are available not only for the in-patients in the wards, but that their services are at the disposal of out-patients who are referred to the hospital by their own doctor. Such patients attend by appointment and are now spared the trouble, inconvenience, and delay of the old-fashioned out-patient department.

Again, steps have been taken during the past year to bring within the supervision of the hospital all known Public Assistance patients who suffer from diabetes. A "diabetic clinic" is held each week at the hospital by the Medical Director and the Assistant Physician. The necessary amount of "Insulin" required by the patient is controlled by blood-sugar estimations, and is notified to the outside practitioner, together with any appropriate advice as to the dietary. Where it is impracticable for the special diet to be obtained from the patient's own resources, its provision as a "medical extra" is recommended to the Relieving Officer. Since the inception of the clinic there has been a marked improvement in the condition of the patients attending.

Finally, as an example of how advances and developments may occur fortuitously and not necessarily by design there may be quoted the neuro-surgical clinic now in existence at the hospital. It transpired that a Surgical Registrar, newly appointed to the hospital, had come there direct from a year's work in the wards of Professor Harvey Cushing, the famous brain surgeon of Boston. Shortly after his arrival at the General Hospital he was asked to undertake the operative treatment of several patients similar to those he had studied and assisted with in the American clinic. The results were encouraging, and as a sequel patients began to be referred from other hospitals. During the course of the year 1933 no fewer than 45 cases of this type were dealt with, and the hospital has now the only established and functioning neuro-surgical clinic between Edinburgh and Manchester.

A word of thanks is due, not only to persons concerned in this enterprise, but also to the surrounding Local Authorities which have co-operated by readily agreeing to accept the financial responsibility for the treatment of patients from their areas.

It is very stimulating to consider how nearly the medical services now administered by the Health Committee approximate



to the ideal of a General Medical Service fulfilling all the needs of the community—or, at any rate, that part of it for which medical relief is provided by the Local Authority.

Firstly, the patient through the Domiciliary Medical Scheme has free choice of doctor. His needs as regards medicines are met from well-stocked municipal dispensaries. The children of the household, according to their age, are under the supervision and medical care of the Maternity and Child Welfare, or School Medical Services. From both, and from the School Medical Service in particular, flow a further large series of benefits. Nor should it be forgotten that as a result of their mother's attendance at an ante-natal centre the official care of these children may have preceded their actual birth.

If any member of the family falls a victim to an infectious disease, the resources of the City Hospital for Infectious Diseases are at his disposal. Should, unfortunately, a suspicion of tuberculosis arise, all the facilities of the Tuberculosis Dispensary and its sanatoria and hospitals are available to rest and restore the patient. If again the condition is one in which the practitioner feels that expert advice would be of assistance to himself and of advantage to the patient, he can make sure of the Consultation Services at the General Hospital. Lastly, there are the wards of the hospital itself to which no one is ever denied admission.

#### *Slum Clearance and Overcrowding.*

During 1933 steady and continuing progress was made with the five-year programme of Slum Clearance adopted by the City Council in 1930. At a public enquiry held in June no fewer than 18 separate areas were dealt with, involving 189 houses and a population of 1,673 persons.

Many of the areas bore names—Gallowgate, Pandon, Wall Knoll, Javel Groupe—which are part of the history of the city, and certain of the houses, giving evidence of hundreds of years of occupation, were relics, broken and uninhabitable, of the old Newcastle which bordered upon the riverside.

It will be remembered that largely as a result of the lassitude of a few Local Authorities, less imbued with the importance of slum clearance than this city, the Minister of Health asked for the preparation of further five-year programmes, and instructed that they should be submitted to him by September 30th, 1933. Newcastle's second five-year programme, which was approved in



principle by the City Council on September 20th, is summarised in Table V. below, together with a statement of the clearances effected under the earlier programme.

TABLE V.

*A.—First Five Year Programme—Approved in principle by the City Council, December, 1930.*

Clearance Areas regarding which action had been taken prior to June 30th, 1933 :—

Areas.	Houses.	Holdings.	Population.
30	733	1,552	6,302

*B.—Summary of Five Year Programme—Approved in principle by the City Council, 20th September, 1933, and subsequently submitted to the Minister of Health.*

	Areas.	Houses.	Holdings.	Population.
Clearance Areas ...	41	2,023	5,103	18,973
Improvement Areas ...	8	505	1,234	4,896
Individual Unfit Houses —		104	265	1,166

The activities of the Health Committee prior to June 30th, 1933, will result eventually in the erection of approximately 1,163 houses for rehousing purposes. Similarly, the new five year plan will require 4,748 additional houses for its completion.

The more spacious Newcastle which will in time replace the old slums and hovels, will be in itself a tribute to the policy of the Health Committee and to the forcefulness and eloquence of its spokesmen.

But the clearance of slums deals with only one portion of our housing difficulties—there remains the great problem of overcrowding with which are linked up vast questions of ill-health and disease, both moral and physical.

It is known that the Government intends at an early date to provide means whereby this evil may be abated, and such action is more than welcome. As to the extent and nature of overcrowding in this city, I would invite attention to the following paragraphs which are reprinted with appropriate amendments from my report for 1932.



The slum dweller is not the only member of Newcastle society whose lot is a pitiable one. These, who in perhaps somewhat better surroundings have to put up with the inconvenience, the congestion, and frequently the indecency of overcrowded dwellings are deserving of consideration. There are many yardsticks by which overcrowding may be measured. One of the simplest, though neither the best nor the most logical, is that of the Registrar-General, which recognises overcrowding as present when premises are occupied by more than two persons per room. This standard is hardly stringent enough, if we recollect that the Ministry of Health basis for rehousing is four persons to a three-roomed house, and five persons to a four-roomed one. Yet on this relatively low standard Newcastle has been for long one of the most densely overcrowded areas in the country. With the exception of the other Tyneside towns, Sunderland, and one or two of the most insalubrious of the London boroughs, there has been, during the present century, no record comparable to our own.

Whereas in 1911 the percentage of the entire population of England and Wales living in conditions of overcrowding was but 9.1, the comparable percentage in Newcastle was 31.6. The details from the last three Census returns are tabulated below :—

TABLE VI.

Year.	England and Wales.	Newcastle upon Tyne.	
	Percentage of Population overcrowded.	Percentage of population overcrowded.	Population living under overcrowded conditions.
1911	9.1	31.6	81,141
1921	9.6	33.6	88,295
1931	6.9	23.3	63,216

There has been a definite improvement in the last decade, but it is of paramount importance that the improvement should continue and be progressive. In obtaining this the rehousing of the 20,139 slum dwellers will undoubtedly assist, but even assuming that they are all to be numbered amongst the 63,216 "overcrowded," there will still remain a population of 43,000 whose claims for space and air and privacy will not have been met. Some of the details revealed by the 1931 Census make appalling



reading. What are we to think of the 117 families living eight or more in one room, or of the 834 families each composed of at least eight members whose only habitation consists of two rooms? Some of the most scandalous cases are recorded in the following table :—

TABLE VII.

*Details of Overcrowding in Newcastle. (Extracts from Census Report, 1931.)*

There were living—

8 in 1 room	...	...	79 families of 632 persons.
9	„	...	29 „ 261 „
10	„	...	7 „ 70 „
11	„	...	2 „ 22 „
8 in 2 rooms	...	...	449 „ 3,592 „
9	„	...	251 „ 2,259 „
10	„	...	82 „ 820 „
11	„	...	39 „ 429 „
12	„	...	10 „ 120 „
13	„	...	3 „ 39 „

The mode of life and domicile of the overcrowded 63,216 of our population remains a potential menace to the health of the entire city. That quarter of the populace which lives in these circumstances supplies as much of the tuberculosis, pneumonia, broncho-pneumonia, typhoid and dysentery as the remaining three-quarters put together. One half of the admissions to the City Hospital for Infectious Diseases come from these houses.

The infant entering upon life in a one-roomed tenement has only three-quarters of the chance of surviving to the age of one which is possessed by the child born in a three-roomed house. The individual, the City, and the Nation, all pay dearly for this too dense aggregation of bodies and souls.

#### *The Ministry of Health Survey.*

As the last matter of administrative importance to receive mention in this commentary on the year 1933, I would refer to the official survey of the Health Services of the City which was carried out by Dr. Eric Donaldson of the Ministry of Health during July and August. Certain other officers of the Ministry, including Brevet-Col. L. W. Harrison, D.S.O., also collaborated



in the survey, but it is to Dr. Donaldson that we are chiefly indebted for the painstaking, sympathetic and constructively critical review which he made of every section of the work of the Health Committee. The comments and suggestions of the Minister were officially communicated to the City Council on 21st February, 1934, and are now receiving the careful consideration which they merit.

*Conclusion.*

In conclusion, I would offer to the Staff of the Department my sincerest thanks and most grateful appreciation for their untiring assistance, loyalty and co-operation.

Nor can I close without reference to the retirement of William Milne, who had served the Department for 44 years, for 12 of them in the onerous and responsible position of Chief Clerk. His unfailing willingness and courtesy, his unique knowledge of the Department, and his kindly wisdom have placed us all under a debt which cannot be adequately acknowledged.

There remains only to express to yourself, Sir, and to the Vice-Chairman and members of the Health Committee, my feeling of gratitude for the kindness and encouragement which throughout the year you have shown to

Your obedient servant,

J. A. CHARLES,

*Medical Officer of Health.*

*Health Department,  
Town Hall,  
Newcastle upon Tyne,  
August, 1934.*



## SUMMARY OF STATISTICS, 1933.

Population (estimated mid. 1933)	...	...	...	...	286,500
Area of City (acres)	...	...	...	...	8,458
Estimated number of houses	...	...	...	...	70,148
Rateable value	...	...	...	...	£2,340,043
Sum produced by ld. rate	...	...	...	...	£9,197
Births	...	...	...	...	4,712
Birth rate (per 1,000 population)	...	...	...	...	16.4
Marriages	...	...	...	...	2,270
Deaths	...	...	...	...	3,640
Death rate (per 1,000 population)	...	...	...	...	12.7
Infantile Mortality (deaths under one year per 1,000 live births)					76
Natural increase in population (excess of births over deaths in the year)	...	...	...	...	1,072

## CHIEF CAUSES OF DEATH.

Cause.	Number.	Percentage of total deaths.
Diseases of the heart	706	19.4
Cancer	404	11.1
Bronchitis and pneumonia	327	9.0
Tuberculosis (all forms)	329	9.0
Do. (Pulmonary)	262	7.2
Diseases of the veins and arteries	297	8.2
Diseases of the nervous system	237	6.5
Diseases of the genito urinary system	185	5.1
Diseases of the early infancy, and congenital malformations under 1 year	146	4.0

## INFECTIOUS DISEASES.

Disease.	Cases notified.	Number of deaths.	Death rate per 1,000 population.
Scarlet fever	2,034	18	0.063
Diphtheria	93	9	0.031
Enteric fever	8	3	0.010
Erysipelas	264	12	0.042
Cerebro-spinal fever	51	26	0.091
Measles	4,080	37	0.129
Tuberculosis (all forms)	619	329	1.148
(new cases)			

Whooping cough, which is not notifiable, caused 25 deaths.

Influenza, which is not notifiable, caused 153 deaths.









CITY AND COUNTY OF NEWCASTLE UPON TYNE.

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INVESTIGATION  
INTO THE  
HEALTH AND NUTRITION  
OF CERTAIN OF THE  
CHILDREN OF  
NEWCASTLE UPON TYNE

Between the Ages of One and Five Years.

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CO-OPERATIVE PRINTING SOCIETY LIMITED, RUTHERFORD STREET,  
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# INVESTIGATION INTO THE HEALTH AND NUTRITION OF CERTAIN OF THE CHILDREN OF NEWCASTLE UPON TYNE BETWEEN THE AGES OF ONE AND FIVE YEARS.

By J. C. SPENCE, M.D., F.R.C.P.

In this report I shall record the results of an investigation into the health and state of nutrition of the children of Newcastle upon Tyne between the ages of one and five years. I shall also comment on the nature and causes of malnutrition, and on experiences gathered from the investigation, which may be of value for a further and more extensive enquiry of a similar character.

The investigation was carried out at the invitation of the Health Committee and of Dr. J. A. Charles—the Medical Officer of Health of the City. It was desired that it should be completed as quickly as possible, so that an immediate view of the problems concerned might be obtained. This necessarily limited its extent. While it must thus be regarded as a preliminary survey, rather than a full and definitive enquiry, I am satisfied that its results give a fair and accurate indication of the state of health of the children from the poor districts of the City, for it deals with matters concerning which there are adequate normal standards and controls for comparison. Moreover, it deals with problems which are familiar to those of us engaged in the clinical investigation of disease in children, for a large part of our daily work consists of a search for a cause and cure of vague ill-health and apparent malnutrition amongst children who are, or by their parents are believed to be, below normal standards of weight, height, activity and energy.

The investigation consisted of the clinical examination of representative sample groups of children. I chose the course of carrying it out by direct personal observation and examination of the children rather than by the correlation and comparison of large numbers of statistics collected by others for two reasons. The first was that I realised that a short and limited enquiry would be of value only if the errors of personal observation were reduced to the minimum. The other reason was that I hoped, while doing the work, to gather new experiences of the problems involved which might serve as a starting point for further enquiries. In the examination of one of the sample groups ("Clinic Group") I had the assistance of two of my colleagues, Dr. C. N. Armstrong and Dr. A. G. Ogilvie; and in collecting the weights and heights of a group of better-class children ("Professional Families Class") I sought the aid of several friends in general practice. In addition, I received valuable help from Dr. A. J. Smith and Miss D. Rogers, of the Newcastle Dispensary, who made arrangements for my examination of one of the sample groups



in their institution ; from Dr. A. F. G. Spinks and Dr. Olga Alcock, for similar arrangements at the Benwell Maternity and other Welfare Clinics ; and from Miss Margaret Duncan in investigating the social conditions of the families.

#### GROUPS OF CASES.

The groups of children were chosen for examination in a manner which gave fair samples of the families of the labouring and artisan classes of the City. In order to correct the bias of seeing only the children who were regular attenders at Welfare Clinics, they were chosen from three sources. Care was taken to exclude any who were known recently to have had serious illnesses.

The sources of the cases were :—

- (1) Maternity and Child Welfare Clinics. The “Clinic Group,” which consisted of 51 children—27 boys and 24 girls—from three different clinics.
- (2) A Salvation Army Sunday School. The “Domestic Group,” composed of 54 children—27 boys and 27 girls.
- (3) The Casualty Department of a Dispensary. The “Casual Group,” in which there were 5 boys and 15 girls, who were found attending for some minor surgical disorder, or merely in company with their parents.

These three groups have been named respectively Group I., “Clinic” ; Group II., “Domestic” ; Group III., “Casual,” for convenience and brevity, and have been kept separate to render easier the analysis of results. It is not meant to imply that the environment of any one group differed from that of the others, for many of those in the “Domestic” and in the “Casual” Groups were also attenders at Welfare Clinics. That the groups represented samples from the same social levels and conditions is revealed by the high percentage of unemployed amongst the parents of each : “Clinic Group,” 46 unemployed out of 51 ; “Domestic Group,” 44 unemployed out of 54 ; “Casual Group,” 13 unemployed out of 20. Together, these 125 children may be taken as typical examples of those between the ages of one and five years to be seen in the poorest houses and streets of the City. Collectively, they are referred to in the report as the “Labouring and Artisan Families Class,” or, more briefly, as the “City Children.”

For contrast and comparison records were collected of the heights and weights and illnesses of the 124 children of the better-class families. These were all children of parents engaged in professions or in commerce, living under good conditions in the residential districts of the City. These are referred to in the report as the “Professional Families Class.”



The health and nutrition of the 125 City children of the Clinic, Domestic and Casual Groups, were estimated from the results of a clinical examination and an enquiry into their environment and previous history. Careful records were made of the following points :

1. The birth history of the child.
2. The growth and development prior to examination.
3. The nature and severity of any illnesses.
4. Any medical or institutional treatment.
5. The diet during and after infancy.
6. The family income and expenditure.
7. The parental capacity.
8. The housing conditions.

#### CLINICAL EXAMINATION.

The Clinical Examination of the children was as full and complete as possible. Knowing that a child may be thin and appear malnourished, but that this may be due to factors other than faulty diet, a careful search was made for the presence of other relevant or complicating factors, of which illnesses resulting from infectious diseases were the most important. Knowing also from the experience of previous investigations that a child may be suffering severely from rickets, xerophthalmia, scurvy, and other diseases of malnutrition, and yet be "normal" in height, weight, and appearance, it was recognised that the clinical examination had to consist of something more than measuring, weighing, and looking at the children.

Particular attention was paid to the following points :—

1. General condition, judged from the appearance, the activity, the subcutaneous covering, the amount and tone of muscle, and the stance of the child.
2. Weight and height measurements.
3. The presence of rickets from clinical examination and from X-ray photographs of the wrists.
4. Hæmoglobin estimations.
5. Development of the teeth.
6. The presence of signs of systemic diseases, particularly infective cervical adenitis, ear infections, splenomegaly, and lung infection.



Microscopic examinations of the urine and tuberculin skin tests, although desirable in an investigation of this sort, were not practicable on this occasion, and were not carried out.

### GENERAL CONDITION.

The general condition, *i.e.*, the physical condition judged from the child's appearance, by taking into account its development, musculature, amount of subcutaneous fat and stance, is a useful standard for recognising those who appear to be in perfect health and nutrition, and those who are obviously thin and in poor condition. But for the assessment of children between these extremes it was found to be unreliable. In the beginning I used categories of (1) Very good, (2) Good and satisfactory, (3) Poor, (4) Very poor. Most of the children fell into the categories 2 and 3, but often the results of further clinical examinations belied the appearances on which they had been classified.

Some classified as of good and satisfactory general conditions were found, on further examination, to be suffering from defects of health and nutrition. Others looked upon as of poor general condition, appearing thin or flabby, were found to be healthy in every other respect. For this reason classification of the general condition was carried only so far as to pick out those in the following categories :—

1. Good and satisfactory, *i.e.*, healthy looking, well-developed children.
2. Poor and unsatisfactory, *i.e.*, thin, wasted and badly developed children.

The rest, which might have been classified variously as of "average" or "moderate" general condition, without setting any significant or definitive value on the terms, were grouped as "remainder." Using these standards, the following results were obtained for the 125 City children in the three sample groups :—

Good and satisfactory general condition.....	41
Poor and unsatisfactory general condition.....	25
Remainder .....	59

### WEIGHT.

The weights were measured to the nearest ounce, the children being either naked or clad in one thin under-garment. The results were recorded, and on the accompanying charts are plotted to the



nearest quarter-pound. For the purpose of classification and comparison I have used the method of making a normal zone of weight, within the limits of which the child of normal health and development might be expected to fall. The numbers as then classified are :—

1. Above the normal zone of weight.
2. Within the normal zone of weight.
3. Below the normal zone of weight.

Plotting the weights on squared paper with the normal zone marked thereon is probably the simplest and most satisfactory method of recording them if they are to be comprehended by the average reader lacking an understanding of higher mathematics. The graphic method reveals how wide is the variation in weight of children at any given age, and how misleading it may be to assess the condition of an individual by a comparison of his weight with an expected “average” standard.

I constituted the zone of normal weight, by using the following figures :—

	At 12 mths. (1 year.)	At 24 mths. (2 years.)	At 36 mths. (3 years.)	At 48 mths. (4 years.)	At 60 mths. (5 years.)
<i>Upper Limit—</i>					
21 lbs.	28 lbs.	33 lbs.	37 lbs.	41 lbs.	
<i>Lower Limit—</i>					
19 lbs.	25 lbs.	29 lbs.	33 lbs.	36 lbs.	

Within this normal zone fall most of the normal weight lines in common use (Holt, Bowditch, British Anthropometric Committees, Board of Health). The average weight of girls being less than 4 per cent. below that of boys, the zone is wide enough to be used for both sexes. Within this also falls a line of “average” weights prepared by the Newcastle upon Tyne Health Department from recent weight figures of 3,966 children of the City Clinics, which were as follows :—

At 12 mths. (1 year).	At 24 mths. (2 years).	At 36 mths. (3 years).	At 48 mths. (4 years).	At 60 mths. (5 years).
20 $\frac{3}{4}$ lbs.	26 $\frac{1}{2}$ lbs.	31 lbs.	34 $\frac{1}{4}$ lbs.	37 $\frac{3}{4}$ lbs.

This zone of normal weight is shown on Chart No. 1, in which are plotted the weights of 124 children of the “Professional Families Class.” These are meant to serve as a basis of comparison, and they reveal that this zone of normal weight is a modest standard to which children may be expected to attain, for 60 of those “Professional Families Class” children were above, 48 within, and 16 below its limits.



The results in the three sample groups of City children have been combined, and are shown on Chart No. 2. The following table gives the numerical results of these according to their relation to the zone of normal weight :—

	Above.	Within.	Below.
Group 1—" Clinic " .....	7	20	24
Group 2—" Domestic " .....	7	16	31
Group 3—" Casual ".....	—	6	14
Total of Labouring and Artisan Families Class .....	14	42	69

Expressed in percentages, and comparing them with the results of the " Professional Families Class," we get the following results :—

Normal Zone :—	% Above,	% Within,	% Below.
" Professional Families " Class (124)	48·4	38·7	12·9
" Labouring and Artisan Families " Class ( <i>i.e.</i> , Groups I., II., and III.) ..... (125)	11·2	33·6	55·2

### HEIGHT.

The heights were measured to the nearest half-inch, and the results are plotted graphically in the accompanying charts (Nos. 3 and 4). Normal standards of height are represented by a zone, similar to that used in the normal weight standards, and for the construction of this the following figures giving heights in inches, were adopted :—

	12 mths. (1 year).	24 mths. (2 yrs.).	36 mths. (3 yrs.).	48 mths. (4 yrs.).	60 mths. (5 yrs.).
Upper Limit of Normal Zone.....	30	35	39	42	44
Lower Limit of Normal Zone.....	28	32	35	38	40

The standards in common use for the heights of normal children (Holt, British Anthropometric Committee) fall within the limits of this zone, and its lower limit is at a level which at least 80 per cent. of healthy children may be expected to reach (see Chart No. 3). The difference in the " average " heights of boys and girls at this age is so slight (less than 2 per cent.) that the zone serves for both sexes.



Chart No. 3 shows the heights of the 124 children of the "Professional Families" Class, and of these 31 (25 per cent.) fell above the zone : 87 (70·2 per cent.) within the zone, and 6 (4·8) per cent. below the zone.

In the three sample groups of the City children, height measurements were made of 115 of them, with the following results :—

Normal Zone :—	Above,	Within,	Below.
Group I.—" Clinic " .....	—	21	20
Group II.—" Domestic " .....	2	25	27
Group III.—" Casual " .....	—	13	7
Total for Labouring and Artisan Families Class .....	2	59	54

Reference to the chart No. 4, where the results are plotted graphically, shows that a considerable number of the children fall below the expected levels. Translating this into percentages, and comparing them with the standard of the "Professional Families" Class of children, the results are :—

Normal Zone :—	% ABOVE,	% WITHIN,	% BELOW.
" Professional Families " Class (124) ..	25·0	70·2	4·8
" Labouring and Artisan Families " Class ( <i>i.e.</i> , Groups I., II., and III.) (115)	1·7	51·3	47·0

### RICKETS.

From the three sample groups of City children a number of X-ray examinations of the wrists were done, in order to estimate the incidence of active rickets, and to provide material for a study of bone development in the carpal centres. In addition, clinical evidence of rickets, based on rib-beading enlargement of the radial epiphyses and bowing of the legs, was sought, and the results recorded. It must be said that the evidence of rickets based on clinical examination without X-rays is most unreliable. True it is that the severe osseous type of the disease, with the marked deformity of the legs and visible "Rickety Rosary," is easily recognised, but the presence of so-called "Rib-beading," revealed only by palpation, is not sufficient evidence of rickets. It was found to be present in many cases where X-rays showed not a sign of active or of recently healed rickets in the wrist. For this reason I have taken only the X-ray appearances of the wrists.



as evidence of rickets. It must be taken into consideration that the examinations were made in the months of July and August, during a summer of exceptional sunshine, when the incidence of the disease would be at its lowest.

From the sample groups 103 children were thus X-rayed. In 5 of these there was revealed active rickets of a severe degree. Their ages were  $1\frac{4}{12}$ ,  $1\frac{6}{12}$ ,  $1\frac{11}{12}$ ,  $2\frac{1}{12}$ , and  $3\frac{9}{12}$  years. In 16 other cases there was X-ray evidence of slight bone changes, suggesting recent rickets of a very mild degree, which had reached the healing stage, but these cannot be classified as cases of active rickets.

The result of this part of the investigation can be summarised by saying that of 103 children examined, 5 had active rickets, and that the remainder were free from the condition. The bone changes seen in the X-rays of the 5 children with rickets were all of the same advanced degree, with a minimal healing reaction. The evidence of the X-rays revealed a fact which may be of great significance, and demands further investigation, namely, that there was no gradation of results between the 5 cases of advanced rickets on the one hand, and the complete absence of active rickets on the other.

#### HÆMOGLOBIN ESTIMATIONS AND INCIDENCE OF ANÆMIA.

The estimations were made with a Sahli-Leitz Hæmoglobinmeter. The standard of hæmoglobin between the ages of one and five is accepted as being between 75 and 85 per cent., the latter being the optimal value which should be expected in a perfectly healthy and well-nourished child. This is an estimate based on the results of many observers, and it confirms my own results in routine clinical work. In order to confirm this further, and to standardise my technique, I took as controls 25 average children from well-housed "Professional Families," and estimated their hæmoglobin with the same hæmoglobinmeter as I used for the investigation of the City children. The results in this control group were as follows:—

Hæmoglobin per cent.	90—85.	84—80.	79—75.	74—70.	Below 70.
Number of cases (Total 25)	1	11	9	4	—

In the sample groups of City children from Labouring and Artisan families there were 121 whose hæmoglobin values were estimated. The results of these are shown in the following table:—



Hæmoglobin per cent.	84-80 %	79-75 %	74-70 %	69-65 %	64-60 %	59-55 %	54-50 %	Below 50 %
Number of cases. (Total) . . . .	9	15	41	28	13	10	5	—

These results can be better interpreted by expressing them as percentages falling above or below chosen levels.

(a) Taking the level of 75 per cent. of hæmoglobin as that which healthy children should reach, there were :—

Above 75 % Hæmoglobin—19·8 % of the children.

Below 75 % Hæmoglobin—80·2 % of the children.

(b) Taking the level of 70 per cent. of hæmoglobin as a dividing line, there were :—

Above 70 % Hæmoglobin—53·7 % of the children.

Below 70 % Hæmoglobin—46·3 % of the children.

(c) Taking the level of 65 per cent. of hæmoglobin as a dividing line there were :—

Above 65 % Hæmoglobin—76·9 % of the children.

Below 65 % Hæmoglobin—23·1 % of the children.

For the purpose of defining anæmia no absolute critical level of hæmoglobin can be set up. Many children with 70 % of hæmoglobin are vigorous and develop well, although that is below the desired or normal value. But it is reasonable to say that children with less than 65 % of hæmoglobin should be regarded as anæmic. Using this as a standard for anæmia, and 75 % of hæmoglobin as the lower limit of normal, the results of the blood examinations can be summarised as follows :—

Of 121 City children from Labouring and Artisan Families 19·8 % had satisfactory hæmoglobin values (above 75 %), and 23·1 % were anæmic (below 65 %). The remainder fell between these standards.

#### INCIDENCE OF OTHER NUTRITIONAL OR DEFICIENCY DISEASES.

In the groups of City children examined no evidences of scurvy, xerophthalmia, nutritional night blindness, nutritional œdema, beri-beri or pellagra were found. There was a high incidence of respiratory and other infections among them, but how much of the lowered resistance to infection and slow recovery from infective illnesses is to be considered as evidence of improper or inadequate nutrition is difficult to decide. The *immediate* incidence of the common infective illnesses of childhood is certainly more dependant on the factors of age and over-crowding than on nutrition ; but it is equally certain



that the severity of these illnesses is influenced to some degree by the adequacy or inadequacy of the diet of the children. Leaving aside for the moment the high incidence and severity of various infective illnesses, no signs of actual deficiency diseases other than rickets and anæmia were found in the City children.

### INCIDENCE OF ILLNESSES.

When the weights and heights of children of the better-class ("Professional Families" Class) were collected, information on the incidence of various diseases amongst them was obtained for the purposes of contrast and comparison. In the same way at the clinical examination of the City children a record was made of the various illnesses and diseases they had passed through. This showed clearly that infection and other diseases were more frequent and occurred at an earlier age in the City children.

Some idea of the relative state of affairs in the two classes will be revealed if I refer to the incidence of respiratory illnesses and measles.

Amongst the 124 better-class children, 2 had suffered from pneumonia, 1 from pleurisy, and 2 others from a chronic and recurrent cough, sufficient in degree to arouse the parents' anxiety and need for treatment.

Amongst the 125 City children, 17 had had pneumonia, and in addition, 32 were or had been affected by chronic or recurrent bronchitis.

Only in 6 of the better-class children was there a record of an attack of measles. Amongst the poor-class children there was a history of measles in 46.

Diarrhœal diseases no longer play an important part in causing ill-health amongst children between the ages of 1 and 5. In only 6 cases was a history of recurrent chronic diarrhœa obtained. On the other hand, a history of abscesses, septic skin infections and otitis is frequent, and in any further inquiry the significance of these should be studied and taken into consideration.

It will be seen how high is the incidence of infective diseases amongst the City children in their earliest years. This has an important bearing on their physical condition and state of health. The damage that is done by these illnesses, occurring at susceptible ages, and under conditions which prevent satisfactory recovery, account for much of the poor physique and ill-health in later years. This must be borne in mind in any approach to the problems of malnutrition. It is a factor probably as important as the factors of inadequate diet and improper housing, and intimately connected with them both, for where serious infective disease is found to be the primary cause



of permanent physical damage, inadequate housing and improper diet will contribute to its ill effects by providing the opportunity for mass infection, and by lowering resistance to the diseases.

### SUMMARY OF RESULTS.

The result of the examination of the City children recorded above, and the comparison of these with normal standards, reveal the following facts :—

55·2 per cent. were below the normal standard of weight.

47·0 per cent. were below the normal standard of height.

23·1 per cent. were anæmic with hæmoglobin values below 65 per cent.

5 children out of 103 specially examined for the purpose had active rickets.

There was no evidence of other nutritional diseases, such as xerophthalmia, scurvy, or nutritional œdema.

The assessment of the physical condition of the City children by taking into account only their appearance, stature and weight was as follows :—

(a) Good and satisfactory general condition—32·8 per cent.

(b) Poor and unsatisfactory general condition—20·0 per cent.

(c) Remainder (“average” or “moderate” general condition), 47·2 per cent.

I have suggested, however, that it is not sufficient that a final estimate of the physical condition of children should be made only by observation of their appearance, stature, and weight, and I therefore shall attempt a re-classification of these three groups by taking into consideration the additional information provided by the blood and X-ray examinations, and by a correlation of these factors.

Out of 125 children there were 41 (32·8 per cent.) who were classified by observation of the appearance, stature and weight as being of “*good and satisfactory general condition.*” None of these showed any signs of rickets, but 5 of them were anæmic with hæmoglobin values below 65 per cent., and cannot therefore be retained in the category. This leaves 36 children of good and satisfactory appearance and general condition, free from rickets and anæmia.

In the “*remainder*” group of 59 children (47·2 per cent.), *i.e.*, the group classified by observation as of “average” or “moderate” general condition, there were 3 who had active rickets (one of whom was anæmic also), and apart from these, there were 12 who were anæmic with hæmoglobin values below 65 per cent. These 15 should



therefore be transferred and classified in the group of "poor and unsatisfactory condition." This leaves 44 children of this "remainder group" who, although slightly under normal standards of weight and height and general condition, may be looked upon as of satisfactory general condition.

In the group of 25 children (20·0 per cent.) classified by observation as of "*poor and unsatisfactory general condition*," all were markedly under normal standards of physical height and weight, 2 had active rickets, and 10 were anæmic. The poor physique of the children of this group, who were free from rickets and anæmia, prevents them being promoted to a higher category, and they remain classified as being of "poor and unsatisfactory general condition."

Adding to this last group of 25 children, the three cases of rickets and the 17 cases of anæmia of the other two groups, the summation of the results is that *out of 125 City children examined 45 (36·0 per cent.) were found to be unhealthy or physically unfit.*

These 45 "unhealthy or physically unfit" children were distributed in the following age groups:—

Between 1 and 2 years—25 (out of 47 in that age group—53·2%).

Between 2 and 3 years—10 (out of 28 in that age group—35·7%).

Between 3 and 4 years— 7 (out of 29 in that age group—24·1%).

Between 4 and 5 years— 3 (out of 21 in that age group—14·3%).

I have approached the problem of ascertaining how much of the ill health of the children can be attributed to the results of microbic diseases or environment, and how much to improper diet, by an analysis of the histories of the 45 children whom I finally classified in that category.

When the mother gave the history that the child thrived well to a certain age, and then developed an illness and did not thrive afterwards, I have attributed its poor and unsatisfactory condition to the effects of that illness. This sequence of events was clear and unmistakable in many cases, particularly when the illness had been the broncho-pneumonia of measles, otitis media, skin sepsis and adenitis.

A sample survey was made of the history of 27 healthy children who were of good and satisfactory general condition and free from rickets and anæmia. In 6 of these cases there was a history of illness—3 cases of pneumonia with prompt recovery, and 3 cases of measles with prompt recovery. The remaining 21 children had escaped any serious illnesses up to the time of examination.



The analysis of the 45 "unhealthy or physically unfit" children gave the following results:—

There were 20 who gave a history of a preceding illness which I deemed to be the cause of their subsequent condition.

In 6 of these measles or some complication of measles had been the starting point of their ill-health.

In 6 broncho-pneumonia, with slow recovery, had been the starting point of their ill-health.

In 5 otitis media, mastoiditis, or skin sepsis and adenitis had been the starting-point of their ill-health.

There remained 25 children of the "unhealthy or physically unfit" group who had no serious illness to which their condition could be attributed. After a careful consideration of the results of their clinical examination and of their diets, I could find no other probable cause than that of improper or inadequate diet, and I feel justified in deducing that the condition of these 25 children was the result of malnutrition.

#### NOTE ON HOUSING CONDITIONS.

A complete analysis of the housing conditions of the families was not made, but the following facts reveal that these conditions probably contribute greatly to the problem of malnutrition and ill-health.

(a) The sample of 27 healthy City children of good physique and condition whose record as regards infectious diseases has previously been referred to, came from families living under the following conditions:—

6 families were in 1 roomed tenements or houses with an average of 2.5 persons per room.

7 families were in 2 roomed houses or tenements, with an average of 2.5 persons per room.

10 families were in 3-roomed houses, with an average of 1.3 persons per room.

4 families were in 4 roomed houses, with an average of 1.4 persons per room.



The average of the whole group was 1·7 persons per room.

(b) The 45 “unhealthy or physically unfit” children came from families living under the following conditions :—

11 families were in 1 roomed tenements, with an average of 4·1 persons per room.

20 families were in 2 roomed tenements, with an average of 3·1 persons per room.

11 families were in 3 roomed houses, with an average of 2·0 persons per room.

3 families were in 4 roomed houses with an average of 1·5 persons per room.

The average of the whole group was 2·6 persons per room.

These results denote that there are children who can be brought up in a state of relatively good health in poor housing conditions, where no doubt the fault is compensated by good mothercraft, efficient housekeeping, and their good fortune in escaping serious illnesses at an early and susceptible age. On the other hand, this examination of the housing conditions shows that there is a direct relationship between overcrowding and ill-health or malnutrition. If serious illnesses and improper diet be accepted as the prime causes of these, the overcrowding in bad housing conditions must be looked upon as an important contributory factor, fostering as it does the chance of mass infection, and impairing the efficiency of the parents in their task of providing a proper and adequate diet for their children.

### CONCLUSIONS.

There are at present no definite standards or formulæ by means of which the physique and state of nutrition of children can be estimated with mathematical accuracy. An expression of the incidence of poor physique or malnutrition must therefore be regarded as an opinion, the validity of which will vary with the experience of the observer and the methods which he uses. Bearing in mind the limitation of the use of figures in this connection, I have drawn the following conclusions from my investigations :—

(1) That at least 36·0 per cent. of the children from the poor districts of the City which I have examined were unhealthy or physically unfit, and as a result of this they appeared malnourished.



(2) That since this high incidence of apparent malnutrition is not found in the children of better class families, it is due to preventable causes.

(3) In my opinion, the main *immediate* cause of the apparent malnutrition of the City children is the physical damage done by infective diseases occurring in young children at susceptible ages, and under conditions which prevent satisfactory recovery.

(4) The main factors which promote and perpetuate this physical damage are probably :—

- (a) The housing conditions which permit mass infections of young children at susceptible ages.
- (b) Improper and inadequate diet, which prevent satisfactory recovery from their illnesses.

It is probable that these two factors are of equal importance ; but I would suggest that opinion on this matter should be reserved until a full enquiry, carried out by competent observers, in a scientific manner, has studied the problem more closely.

28th December, 1933.



## OBSERVATIONS ARISING OUT OF THE INVESTIGATION INTO THE HEALTH AND NUTRITION OF CERTAIN CHILDREN OF NEWCASTLE UPON TYNE.

By J. A. CHARLES, M.D., M.R.C.P., D.P.H.,  
Medical Officer of Health of the City.

The authors of the Annual Reports of the Newcastle Dispensary have rarely been content with a formal statistical statement of the activities of the charity. From time to time, in a few words of incisive comment, they have drawn attention to the unenviable circumstances under which its clients live, or have indicated the injurious effects of disease upon its patients.

### *History of the present investigation.*

It will be within the memory of the Health Committee how it was stated in the Annual Report of the Dispensary for 1931 :—

“ . . . . . the Committee are gravely concerned about the great increase in poverty, sickness and malnutrition amongst the poorest classes in the City.”

A pronouncement so serious could not be denied full investigation and enquiry. Accordingly, at the request of the Ministry of Health, a report was submitted in February, 1933, for the information of the Health Committee, the Public Assistance Committee and the City Council, which dealt, so far as I found it possible to do so, with the causes and origins of the anxiety of the Dispensary Committee. The concluding paragraph of this document may be quoted here :—

“ In conclusion, I would submit that though the expressions of the Dispensary Report are incapable of statistical proof, they do contain more than an element of truth, and reflect the condition of many of the inhabitants of this City, both in 1931 and at the present time.”

The opinion so stated requires little, if any, qualification a year later. Malnutrition, or its facsimile, is still present in varying degree amongst the women-folk and certain of the younger children of the unemployed, but tends to leave untouched the children of school age, and the infants in arms. Our social services and the medical ancillaries based upon them, do not as yet provide an absolutely continuous and continuing surveillance of the health of the individual throughout his lifetime. Of the unbridged gaps still remaining, none is so important as that period of four years between the first



and the fifth birthdays, during which the "toddler" is allowed to garner, not inevitably, but all too often, the seeds of future invalidity or disease.

Taking the Census year 1931 as a basis, it is possible to compare roughly, but with sufficient accuracy for our purpose, the proportion of the City's children—of infants, toddlers and school children respectively, who came within the active supervisory protection of the Municipal Medical Services.

There were in Newcastle at the date of the 1931 Census, 4,829 children under the age of twelve months, 18,578 between the ages of 1 year and 5 years, and 46,666 who had passed their fifth, but had not attained their 14th birthday.

During the same year 3,208 children under the age of 1 year were brought to the infant welfare centres, 4,257 between the ages of 1 year and 5 years attended the "toddler" sessions, and 44,504 of school age were on the registers of the elementary schools of the City. It will be appreciated that these methods of grouping the children do not permit of a perfectly strict and accurate comparison, and that fallacies may arise in contrasting the various groups one with another. Nevertheless, on the basis of these figures, one can say that approximately 75 per cent. of infants attend the Centres, that 23 per cent. of the "toddlers" are under similar supervision, and that 95 per cent. of the children of elementary school age are carried on the registers, and so come within the purview of the School Medical Service. We have reason to congratulate ourselves that practically 75 per cent. of the infants in arms attend the Centres and Clinics, but the absence of the "toddlers"—their virtual abstension from the services provided for their over-sight and nurture—can only be deplored. The efficiency and thoroughness of the School Medical Service needs no testimonial here.

Evidently, therefore, when a search is to be made for the signs and physical indications of malnutrition, such investigation should be particularly directed to that fraction of the City's population which, being susceptible by reason of the tenderness of its years, is nevertheless under ordinary circumstances less liable to be subject to the routine of medical supervision.

It was with this object in view that the Health Committee requested Dr. J. C. Spence to conduct an investigation into the health and physical welfare of children between the ages of 1 and 5, whose home conditions would be typical of the poorer labouring and artisan families of the City.



The results of this enquiry, itself a model of accurate and painstaking observation, have been recorded by Dr. Spence in a report which is an example of lucid exposition and temperate commentary. To that report, these observations and those which follow, are by way of post-script.

### *Possible Criticisms.*

It may be well to anticipate two possible criticisms of the report : firstly, that its conclusions are based on selected cases, and are not applicable to the entire child population of this City ; secondly, that the findings which indicate the presence of malnutrition amongst 36 per 100 of the children examined, are at variance with the data collected annually by the School Medical Service.

As regards the former criticism, it may be admitted that the examinees were in a sense " selected," in that they were obtained from clinics and other sources particularly patronised by children of unemployed families, but on the other hand, they were unquestionably " random " and " unselected " members of the categories from which they came. The object of the enquiry was not to review the health and physique of the whole child population within the prescribed age limits, but merely to collect relevant information regarding those groups of children whose circumstances rendered them peculiarly liable to be the subjects of malnutrition.

A consideration of the later paragraphs of Dr. Spence's report, particularly of the table in which the age distribution of the defective children is set out, and a comparison of these figures with the statistical information provided in Table IIB of the Annual Report of the Principal School Medical Officer does not suggest the presence of any major discrepancy. Dr. Spence's figures for the four years old group are admittedly small, but of 21 examined 3, or 14·3 per cent., were found to be of such poor or unsatisfactory health or physique as to be regarded as " unhealthy or physically unfit." The Principal School Medical Officer, enumerating a somewhat more comprehensive series of defects, some of which do not imply an impairment of nutrition, indicates in his report for 1932 that of the five year old entrants to school, 17·8 per cent. were found to require treatment. In short, we may say that both sets of data incline to the same conclusion, namely, that much damage has been done to the health of many of the City's children before they reach school age.

Let us turn from these possible criticisms to consider quite briefly the tenor of Dr. Spence's conclusions as to the causation of this ill-health



and physical unfitness. In his opinion, the *fons et origo* of all these troubles is to be found in the physical damage done by infective diseases in young children, and he associates with this main and major cause two contributory causes: bad housing and improper and inadequate diet. To comment in any detail on these very pertinent and authoritative findings would necessitate a report of considerable dimensions. But there are certain items of information now available which are highly relevant to Dr. Spence's conclusions, and these may be set out quite shortly.

*The relation of overcrowding to the incidence and fatality of infectious disease.*

Of the 19 wards of the City there are five more fortunate ones, where the number of persons per room is considerably below the average for the City as a whole, and five less happily circumstanced, where it is markedly in excess. Certain statistical details relating to these wards are set out in Table I.

TABLE I.

Population and density of certain wards in Newcastle upon Tyne at 1931 Census, and Measles and Rubella statistics for decennium 1923-1932 :—

Order of Density. Low to High.	WARD.	Popula- tion. Census 1931.	Persons per Room, Census 1931.	Total Cases Measles and Rubella, 1923-32.	Total Deaths, Measles and Rubella, 1923-32.	Case Mor- tality per Cent.
1	Jesmond .....	10,944	0.58	611	1	0.16
2	Arthur's Hill .....	9,185	0.76	938	5	0.53
3	St. Thomas' .....	13,698	0.81	1,387	18	1.30
4	Dene .....	17,404	0.82	1,206	4	0.33
5	Heaton .....	13,084	0.92	1,294	9	0.69
Total Wards 1-5		64,315		5,436	37	0.68
15	Byker .....	15,585	1.45	2,820	45	1.59
16	St. Anthony's .....	15,356	1.52	2,886	63	2.18
17	St. Lawrence .....	17,531	1.56	2,998	67	2.24
18	St. John's .....	13,450	1.59	2,545	53	2.08
19	All Saints' .....	14,508	1.79	2,653	60	2.26
Total Wards 15-19		76,430		13,902	288	2.07

Average number of persons per room for the whole City (Census, 1931)=1.13



Much can be learnt by studying the natural history of the common infectious disease in these two groups of wards. The records of measles and rubella (German measles) during the ten year period from 1923 to 1932, are worthy of study both as regards incidence and fatality.

In the first, or residential group of wards, as will be seen from Table I., there were 5,436 known cases of these infections during the decennium. In the second, or densely congested group, there were 13,902 cases during the same period. The disparity between the two sets of figures does not afford a basis for argument. It is probably attributable in great part to the difference in the total populations of the two groups, and the much larger number of children in the more densely populated areas.

But an analysis of the age incidence of these diseases provides some remarkable contrasts. In Jesmond and the associated wards, out of every 1,000 cases of measles and rubella reported in 1931 and 1932, 648 occurred after the age of five, whereas in the other group of wards 687 occurred in patients below that age. If we consider the period at which measles is most fatal, namely, before the age of three, we find that in the "residential" wards 172 cases of measles and rubella out of every 1,000 were below that age; but in the densely populated wards no fewer than 391 cases out of every 1,000 had been infected before their third birthday.

The full details are set out in the following table :—

TABLE II.

Age Distribution of Measles and Rubella per 1,000 Cases.

Years 1931 and 1932.

WARDS.	Total No. of Cases.	Under 1 Year.	1-2.	2-3.	3-4.	4-5.	5-10.	Over 10 years.
(1) Wards with low density of persons per room.								
Jesmond.....	1,132	30	50	92	76	104	600	48
Arthur's Hill ....								
St. Thomas'.....								
Dene .....								
Heaton .....								



TABLE II.—*continued.*

Age Distribution of Measles and Rubella per 1,000 Cases.  
Years 1931 and 1932.

WARDS.	Total No. of Cases.	Under 1 Year.	1-2.	2-3.	3-4.	4-5.	5-10.	Over 10 years.
(2) Wards with high density of persons per room.								
Byker . . . . .	2,713	79	137	175	147	149	305	8
St. Anthony's . . . .								
St. Lawrence . . . .								
St. John's . . . . .								
All Saints' . . . . .								

Knowing these facts, we are not surprised to learn that the case mortality rate for measles per hundred notifications of measles and rubella is three times greater in the overcrowded areas than in the residential districts. The rates for the two groups of wards during the decennium under review were 2·07 per cent. and 0·68 per cent. respectively. In Jesmond, where in 1931 there were 10,944 persons occupying 18,869 rooms, there was only one recorded death from measles during the whole ten years.

Under present conditions, these premature attacks of infectious disease, and their legacy of subsequent ill-health and disability in many cases, would appear to be the inevitable and melancholy heritage of the slum child.

*The economic aspect of the dietary problem.*

Let us turn from these problems to consider the kindred question of the inadequate and improper dietary which is an associated factor in the causation of ill-health amongst our City families. The British Medical Association has recently published the report of its Nutrition Committee which assesses the daily needs of the individual as 3,400 calories per man value, and estimates the cost of a varied diet supplying this number of calories at 5s. 10½d. per week. This latter figure is based on an average of the prices prevailing for foodstuffs in various parts of England and Wales in June, 1933. In Stockton, whence many of the data for the report were obtained, the cost of this diet was not 5s. 10½d., but 4s. 11¾d. Similarly in Newcastle, where the habits of the housewife as regards home-baking, etc., are much as they are in



Stockton, the weekly cost was 5s. 3½d. It should be realised that the British Medical Association allowance of 3,400 calories per diem per man value is more liberal than the earlier official standard of 3,000 calories suggested by the Ministry of Health. The British Medical Association scale not only makes a definite provision for waste in preparation and digestion of the food, but the proportions of certain of its constituent elements (*e.g.*, first-class or animal protein) are higher.

These differences are, of course, reflected in the relative costs of the two diets, but the effect is less than might be imagined. If we accept it as a fact that in June, 1933, the Newcastle price for the British Medical Association suggested ration was 5s. 3½d. per man value per week, then the cost of a comparable diet on the official scale of 3,000 calories would have been approximately 4s. 9½d. Actually, the prices which would have procured these diets at a cost of 5s. 3½d. and 4s. 9½d. respectively were only effective in Newcastle for a few weeks last summer, and certainly no longer prevail.

Even if they did, the diets in question are both beyond the means of many of the poorer section of our population. Pertinent to this point are the investigations carried out over the past ten months by the Chief Health Visitor and her Staff into the weekly budgets of a large number of working-class families in the City. In all, some 50 budgets have been compiled, but it will be sufficient to quote the results of the most recent enquiry, which understates rather than exaggerates the position.

During five consecutive weeks of January and February of this year, a careful analysis was made of the family budgets of fifteen Newcastle homes, where the income came, for the most part, from Unemployment Benefit or Public Assistance sources. The records of these fifteen households shewed that the amount spent weekly on food per man value was 4s. 5·8d. At January prices in Newcastle, the British Medical Association ration, and a diet based on the Ministry of Health standard, would have cost respectively 5s. 7½d. and 5s. 1½d.

Even if we allow for the all too frequent self-sacrifice of the mother of the family, and take into consideration the auxiliary sources of food available for the children—the Welfare Centres and the School Kitchens of the Education Committee—it is still certain that in many of our poorer homes, child and adult alike have an inadequate dietary.

Every item of cost has to be scrutinised if the family budget is to balance, and a particular example of the need for this strict accountancy arose in November last.



Small as is the amount of fresh milk ordinarily consumed per head in this City, the fixing of the winter price at 7d. per quart, which became effective during that month, reduced it still further. An investigation was made into the varieties of milk used by 1,452 working-class families. Prior to the fixing of the winter price at 7d. per quart, 392 families, or 27 per cent. used condensed milk only. After the price had been increased, 500 families, or 34·5 per cent., found that condensed milk was the only form within their financial capacity.

These data refer to the families using condensed milk exclusively. Others which bought fresh milk as a Sunday luxury and contented themselves with the condensed article for the remainder of the week are not included.

### *Recommendations.*

Sufficient has perhaps been said to throw a little additional light upon the causal factors alluded to by Dr. Spence, and by inference to indicate certain appropriate remedies.

It will not be necessary to discuss these latter in detail, for in a great part they are neither new nor novel. A solution to our present problems is to be found in the extension of services already existing, and in a more liberal conception of the communal responsibilities in certain other directions. Of these remedies, the following can be prescribed without more than a word of comment :—

(1) The improvement of much of the existing housing accommodation in the City. This should be directed not only to the replacement of insanitary property, but also to mitigating the evils of overcrowding.

(2) The provision of more abundant hospital facilities for the treatment of severe and complicated cases of measles and whooping cough, and of patients from overcrowded homes. Arrangements for the institutional after-care of these cases during convalescence would do much to reduce subsequent ill-health and invalidity.

(3) An improvement in the quantity and quality of the dietary. This could be obtained in a variety of ways : the most obvious and direct being :—

(a) An extension of the issue of milk through the Child Welfare Centres so as to benefit more particularly children in those age groups where ill-health and physical unfitness are most prevalent (*i.e.*, in the 1-2 year, 2-3 year, 3-4 year age groups).



- (b) An increase in the monetary allowance for the child dependant paid under the various scales of unemployment and transitional benefit and Poor Law Relief.
- (c) The education of mothers not only in simple and economical cookery, but in the purchasing of food-stuffs and the compilation of diets.

To these there may be added one remedy, which, though not available at present, would be of inestimable importance, namely :—

- (d) The extension of those sections of the Education Act of 1921, which relate to the provision of meals for scholars so that they may apply to the pre-school child.

(4) Reconsideration of the functions and scope of the Child Welfare Services with particular reference to the duties of the Health Visitor.

The toddler or pre-school child has received rather less than a fair share of official attention, and much could be done either by increased provision of nursery schools, or in other ways to bring him into more immediate and continued supervision. As regards the Health Visitor, Sir George Newman, in his annual report "On the state of the Public Health" for the year 1932, states: "It is frequently noted that undue time is spent in clerical work or in routine duties at centres or clinics, which might equally well be carried out by a non-professional officer. In very few areas is the home visiting of children up to school age systematically and adequately done."

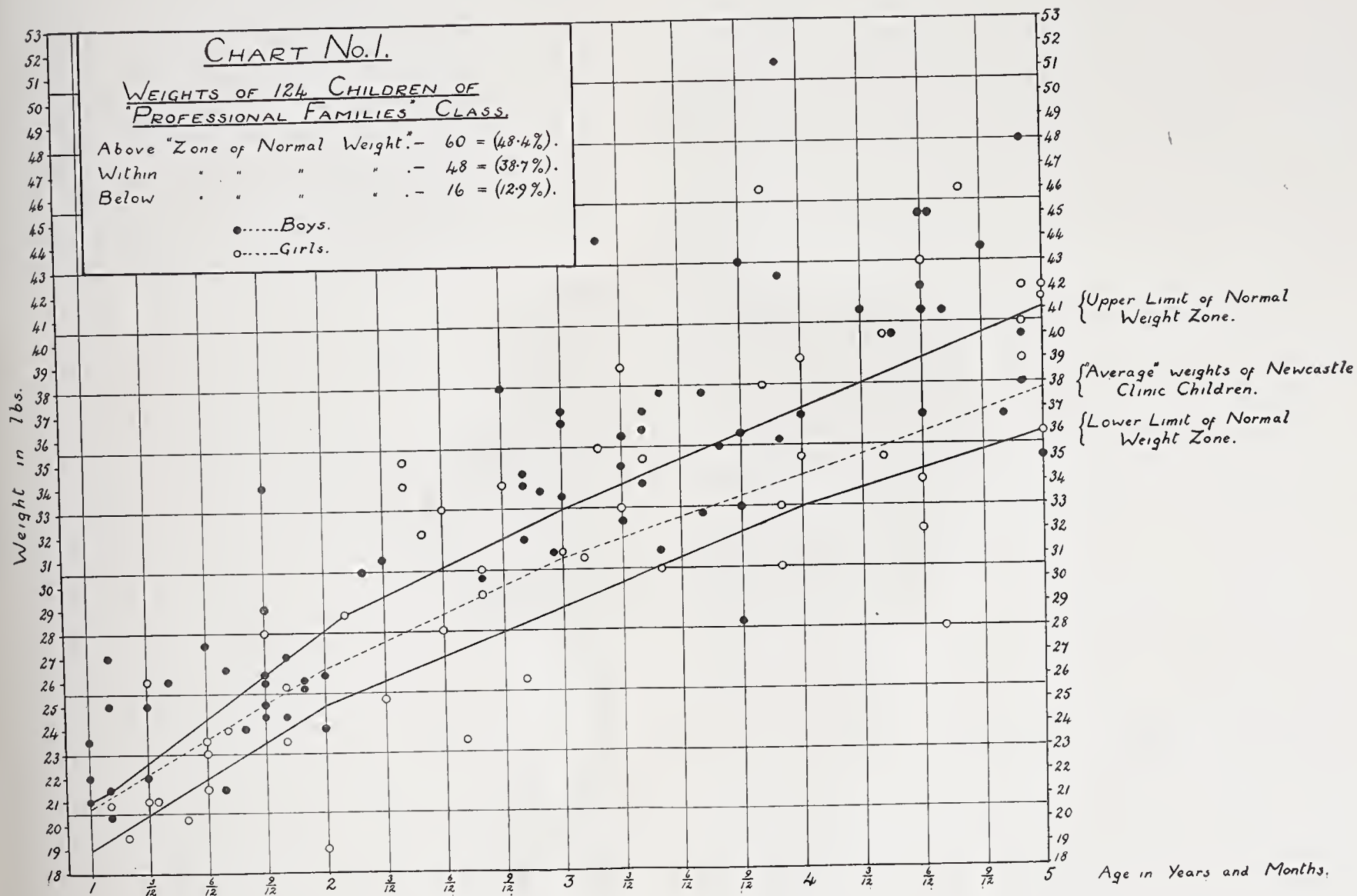
This is very apposite criticism, and there can be no question that the Health Visitor should be relieved of many of those unskilled and routine tasks. Their place could be taken by other duties in which she would function both as a social worker and as a teacher of Preventive Medicine. In these capacities her sphere of usefulness would be considerably increased.

(5) Finally, there is an urgent need for more frequent surveys of the type described in this report.

Only by periodic inspection of cross sections of the population, particularly at those ages and amongst those groups of the community where medical care and supervision are haphazard affairs, can we determine whether its constituent members are achieving that measure of health and efficiency which is their due.

28th February, 1934.

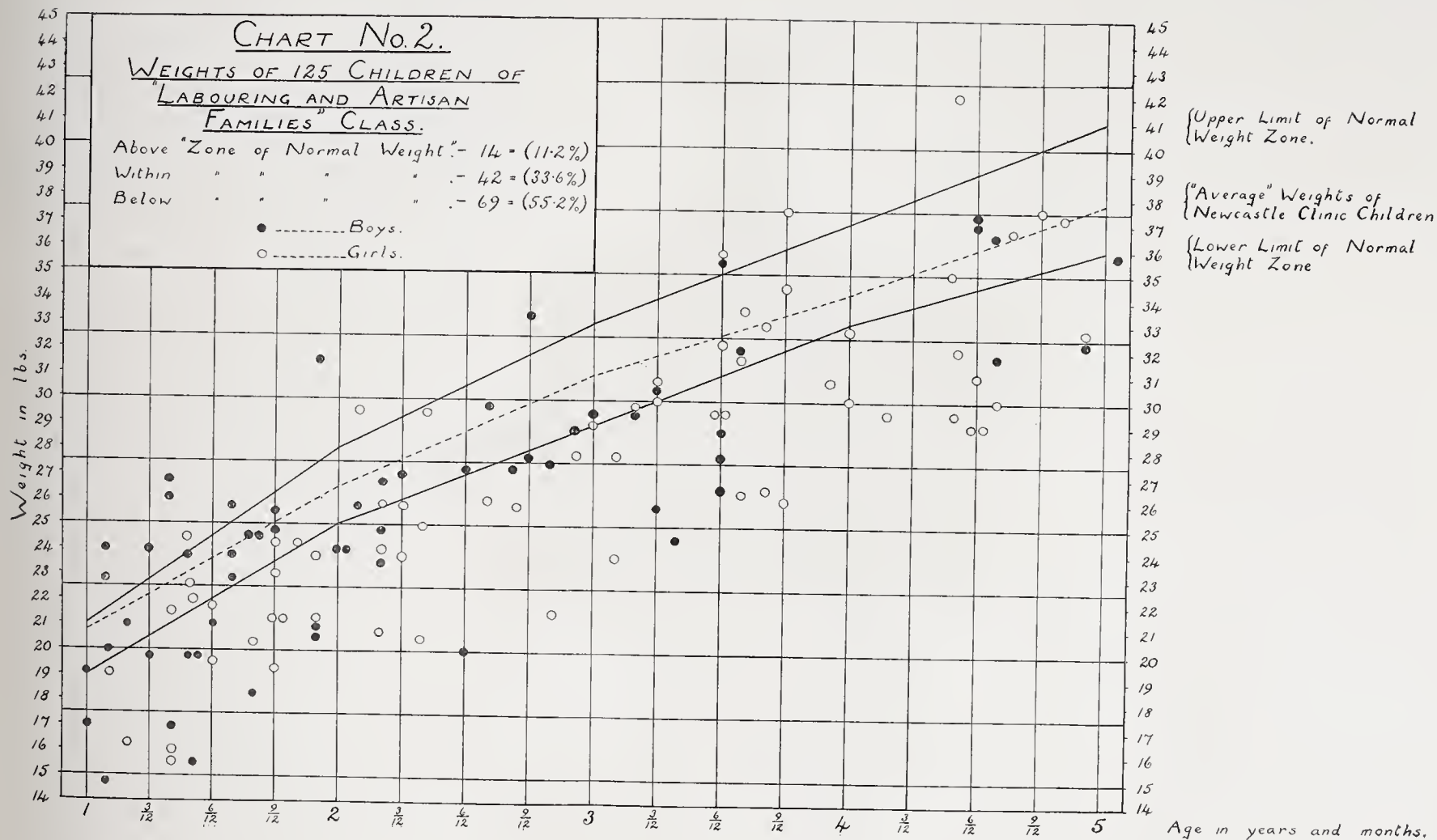








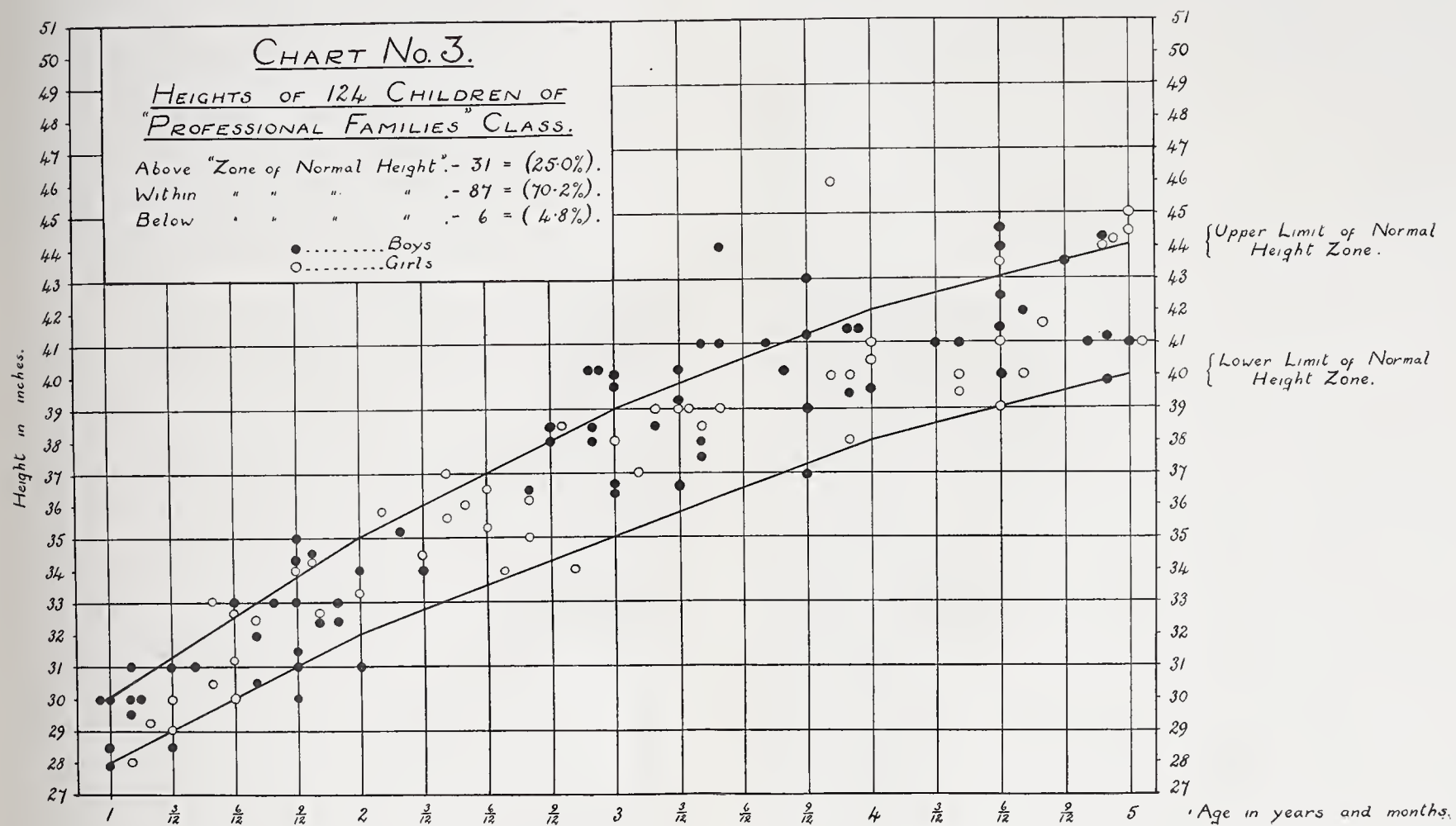








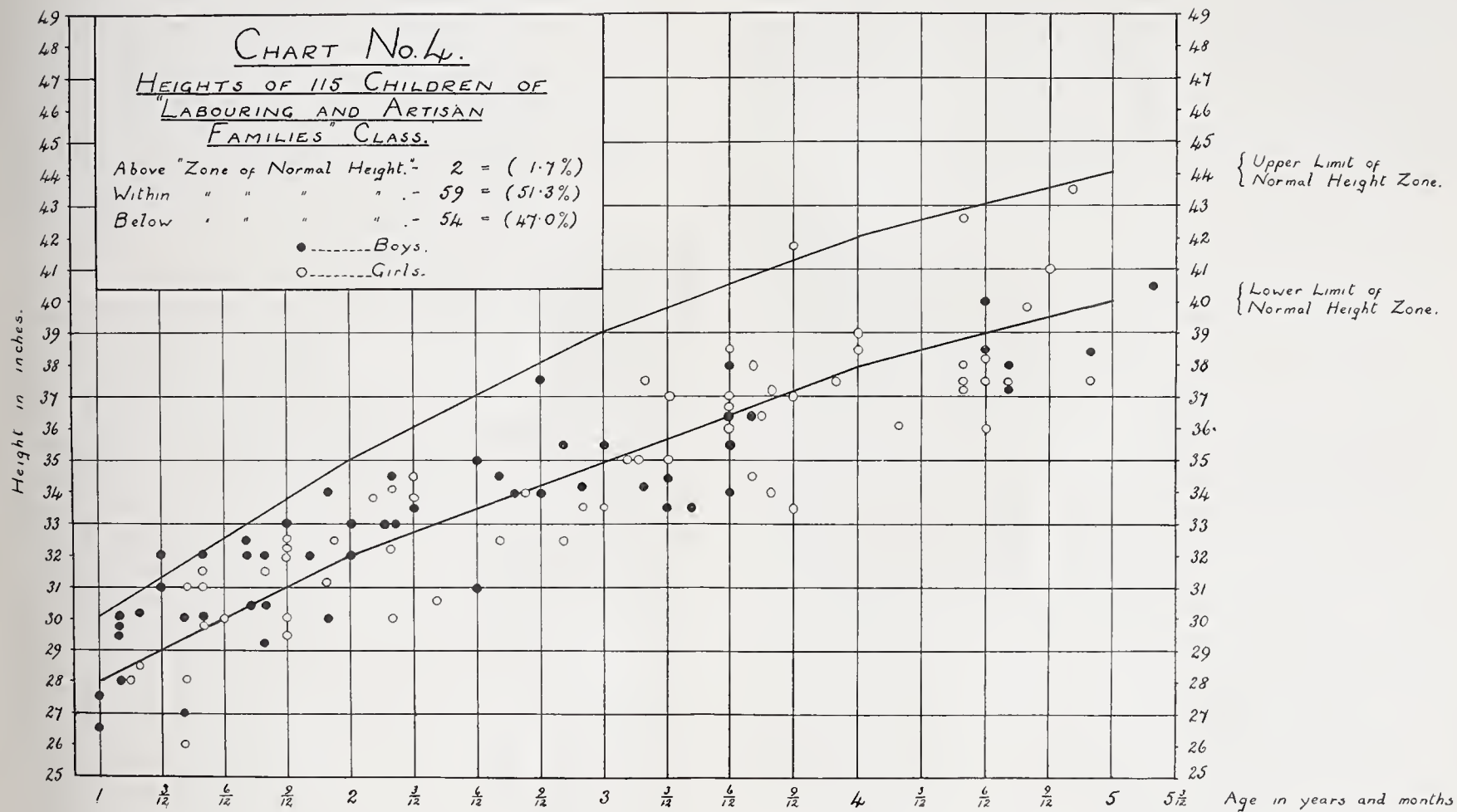


















**APPENDIX B.**

## No. 1 (UNEMPLOYED).

FAMILY BUDGET FOR WEEK ENDING 24TH JUNE, 1933.

Constitution of family—2 parents, 2 children under 14 years.

Man Value=2.63.

No. of Rooms, 1.

Income, 27s. 3d. Unemployment Benefit.

Item.	Quantity.	s.	d.
Rent.....		4	10
Coal and Gas .....		3	2
Clubs and Insurance.....		4	1
Clothing .....		2	6
Cleaning Materials .....		0	9
Other expenses .....		1	8
Savings .....		0	5
		17	5
Flour .....	$\frac{3}{4}$ stone .....	1	0
Yeast .....		0	2
Tea .....	$\frac{1}{2}$ lb.....	1	1
Sugar .....	4 lbs. ....	0	9
Margarine .....	2 lbs. ....	0	8
Lard .....	$\frac{1}{2}$ lb.....	0	3
Jam.....	1 lb.....	0	4 $\frac{1}{2}$
Currants .....	$\frac{1}{2}$ lb.....	0	3
Rice .....	1 lb.....	0	2 $\frac{1}{2}$
Milk .....	3 pints.....	0	7 $\frac{1}{2}$
„ Tinned .....	2 tins .....	0	4
Eggs .....	8 .....	0	6
Meat—Frozen.....	4 lbs. ....	2	0
Fish.....	1 lb.....	0	6
Potatoes .....	1 stone .....	0	6 $\frac{1}{2}$
Cabbage .....	1 lb.....	0	1
Fruit—Bananas and oranges .....		0	6
		9	10

Amount spent on food per man value per week=44.9 pence.



## No. 2 (EMPLOYED).

FAMILY BUDGET FOR WEEK ENDING 11TH AUGUST, 1933.

Constitution of family—2 parents, 2 children under 14 years.

Man Value=2.63.

No. of Rooms, 1.

Income, 29s. 3d. wages.

Item.	Quantity.	s.	d.
Rent.....		3	0
Coal and Gas.....		3	2
Clubs and Insurances .....		3	8
Other Expenses and Savings.....		4	11½
Cleaning Materials .....		0	8
		15	5½
Flour .....	¾ stone .....	1	1½
Yeast .....		0	2
Tea .....	¾ lb.....	0	9
Sugar .....	2 lbs. ....	0	5
Butter.....	½ lb.....	0	5
Margarine .....	1 lb.....	0	6
Lard .....	¼ lb.....	0	2
Suet .....		0	1
Jam.....	1 lb.....	0	6½
Cheese.....	½ lb.....	0	4
Rice .....	½ lb.....	0	2
Milk .....	14 pints .....	3	4
„ Tinned .....	1 tin .....	0	4½
Eggs .....	6 .....	0	6
Meat—Frozen.....	3 lbs. ....	1	6
Bacon .....	1 lb.....	0	7
Fish.....	1 lb.....	0	6
Potatoes .....	14 lbs. ....	0	8
Vegetables .....		1	0
Fruit .....	1 lb.....	0	6
Cocoa .....	1 oz.....	0	2
		13	9½

Amount spent on food per man value per week=62.9 pence.



## No. 3 (UNEMPLOYED).

FAMILY BUDGET FOR WEEK ENDING 22ND JULY, 1933.

Constitution of family—2 parents, 3 children under 14 years.

Man Value=3·93.

	s.	d.	
Income :—	28	9	Public Assistance.
	8	0	Pension.

No. of Rooms, 2.

36	9
----	---

Item.	Quantity.	s.	d.
Rent.....		6	0
Coal and Gas.....		3	6
Clubs and Insurances .....		2	6
Clothing .....		4	0
Cleaning Materials .....		1	6
Tobacco .....		2	0
Other Expenses .....		3	5
		22	11
Flour .....	1 stone .....	1	4
Bread .....	8 lbs. ....	1	2
Tea .....	1 lb.....	1	0
Sugar .....	5 lbs. ....	1	0
Butter.....	$\frac{1}{2}$ lb.....	0	6
Margarine .....	$\frac{1}{2}$ lb.....	0	3
Lard .....	1 lb.....	0	6
Suet .....		0	2
Jam.....	1 lb.....	0	6
Cheese.....	1 lb.....	0	6
Rice .....	1 lb.....	0	3
Milk .....	3 tins .....	1	0
Meat—Frozen.....	4 lbs. ....	2	0
Bacon .....	1 lb.....	0	6
Eggs .....	1 dozen.....	1	2
Fish.....	2 lbs. ....	1	0
Potatoes .....	14 lbs. ....	1	0
Cabbage .....	2 lbs. ....	0	2
Fruit (Plums).....	1 lb.....	0	4
Sweets .....	$\frac{1}{2}$ lb.....	0	6
		14	10

Amount spent on food per man value per week=45.3 pence.



## No. 4 (EMPLOYED).

FAMILY BUDGET FOR WEEK ENDING 22ND JULY, 1933.

Constitution of family—2 parents, 3 children under 14 years.

Man Value=3.73.

No. of Rooms, 1.

Income, 42s. wages.

Item.	Quantity.	s.	d.
Rent.....	.....	4	0
Coal and Gas.....	.....	6	0
Clubs and Insurances } .....	.....	5	9
Clothing and Travelling } .....	.....	1	0
Cleaning Materials .....	.....	1	6
Tobacco .....	.....	0	3
Other Expenses.....	.....	2	5
Balance.....	.....	20	11
Flour .....	2 stones .....	2	8
Tea .....	1 lb.....	1	6
Sugar .....	6 lbs. ....	1	3
Butter.....	1½ lbs. ....	1	1½
Lard .....	1 lb.....	0	5½
Jam.....	2 lbs. ....	0	8½
Cheese.....	1 lb.....	0	7
Rice .....	1 lb.....	0	3
Cocoa .....	¼ lb.....	0	5
Milk .....	2 pints.....	0	5
„ Tinned .....	3 tins .....	0	10½
Eggs .....	1 dozen .....	1	4
Beef .....	5¾ lbs.....	6	0
Bacon .....	1 lb.....	0	9
Fish.....	1 lb.....	0	6
Potatoes .....	½ stone .....	0	7
Cabbage .....	3 lbs. ....	0	4
Fruit—Apples .....	2 lbs. ....	0	10
Sweets .....	½ lb.....	0	6
		21	1

Amount spent per man value per week=67.8 pence.



## No. 5 (UNEMPLOYED).

## FAMILY BUDGET FOR WEEK ENDING 11TH AUGUST, 1933.

Constitution of family—2 parents, 3 children (girls) over 14  
and 3 children under 14 years.

Man Value=6.12.

INCOME :—      s.    d.  
29    3    Unemployment Benefit.  
11    6    Pension.  
8    0    from family.

No. of Rooms, 3.

48    9

Item.	Quantity.	s.	d.
Rent.....		6	0
Coal and Gas.....		3	4
Clubs, Insurance and Clothing ...		11	0
Cleaning Materials .....		2	0
Other Expenses, Newspapers, etc. ....		2	6
		24	10
Flour .....	3 stones .....	4	3
Yeast .....		0	3
Tea .....	1 lb.....	1	0
Sugar .....	6 lbs.....	1	1½
Butter.....	¼ lb.....	0	3
Margarine .....	3 lbs.....	1	6
Lard .....	¼ lb.....	0	1½
Jam.....	1 lb.....	0	4½
Cheese.....	½ lb.....	0	3½
Cereals—Rice and Peas .....	2 lbs.....	0	3½
Milk .....	1 pint .....	0	2½
„ Tinned .....	4 tins .....	0	8
Eggs .....	3 dozen .....	2	9
Meat—Chilled.....	10 lbs.....	7	6
Bacon .....	2 lbs.....	1	6
Fish.....	1 lb.....	0	6
Potatoes .....	1¼ stones.....	1	0
Vegetables .....		0	4
Cocoa .....	2 ozs. ....	0	2½
		24	1½

Amount spent on food per man value per week=47.3 pence.



## No. 6 (EMPLOYED).

FAMILY BUDGET FOR WEEK ENDING 31ST JULY, 1933.

Constitution of family—2 parents, 6 children under 14 years.

Man Value=5.33.

No. of Rooms, 2.

Income, 57s. 6d. wages

Item.	Quantity.	s.	d.
Rent.....		6	0
Coal and Gas.....		4	8
Clubs and Insurances.....		2	6
Clothing, other Expenses and Savings .....		20	6½
Cleaning Materials .....		1	2
		34	10½
Bread .....	3 stones .....	4	6
Yeast .....		0	6
Tea .....	1¾ lbs.....	1	9
Sugar .....	4 lbs.....	0	10
Butter.....	1 lb.....	0	10
Margarine .....	2½ lbs.....	0	10
Lard .....	1 lb.....	0	4½
Suet .....		0	1
Jam.....	2 lbs.....	0	7½
Cereals—Rice and Lentils.....	2 lbs.....	0	4½
Milk .....	7 pints.....	1	2
„ Tinned .....	3 tins .....	0	5½
Eggs .....	12.....	1	0
Meat—Chilled.....	7 lbs. ....	5	0
Bacon .....	1 lb.....	0	10½
Fish.....	½ lb.....	0	3
Potatoes .....	1½ stones.....	1	3
Vegetables .....		0	9
Fruit, including Tomatoes, Oranges, etc.....		1	2
		22	7½

Amount spent on food per man value per week=51.0 pence.



CITY AND COUNTY OF NEWCASTLE UPON TYNE.

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# Health Report, 1933.

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## 1.—GENERAL.

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MORTALITY TABLES,  
SOCIAL CONDITIONS, CLIMATOLOGY.  
WATER SUPPLY, DISPOSAL OF REFUSE.







## Population, Birth Rate, and Special Mortality Rates during the period of the Notification of Infectious Diseases.

Year.	Population	Birth Rate	General Death Rate	Infantile Mortality (Deaths per 1,000 Births)	Number of Cases Notified	Puerperal Sepsis	Total Maternal Deaths		Zymotic Death Rate	Diarrhoea and Enteritis (All Ages)		Smallpox		Typhus		Enteric Fever				Diphtheria				Scarlet Fever				Erysipelas				Measles**				Whooping Cough		Cancer		Tuberculosis				Total			Year.													
							Number of Deaths	Death Rate per 1,000 Births		Number of Deaths	Death Rate per 1,000 Population	Cases Notified	Number of Deaths	Case Mortality per cent.	Death Rate per 1,000 Population	Attack Rate per 1,000 Population	Cases Notified	Number of Deaths	Case Mortality per cent.	Death Rate per 1,000 Population	Attack Rate per 1,000 Population	Cases Notified	Number of Deaths	Case Mortality per cent.	Death Rate per 1,000 Population	Attack Rate per 1,000 Population	Cases Notified	Number of Deaths	Case Mortality per cent.	Death Rate per 1,000 Population	Attack Rate per 1,000 Population	Cases Notified	Number of Deaths	Case Mortality per cent.	Death Rate per 1,000 Population	Attack Rate per 1,000 Population	Cases Notified	Number of Deaths	Case Mortality per cent.	Death Rate per 1,000 Population	Attack Rate per 1,000 Population	New Cases Notified	Number of Deaths	Death Rate per 1,000 Population	Attack Rate per 1,000 Population	New Cases Notified		Number of Deaths	Death Rate per 1,000 Population	Attack Rate per 1,000 Population	New Cases Notified	Number of Deaths	Death Rate per 1,000 Population	Attack Rate per 1,000 Population						
1885	161,526	36.2	24.7	174	11	4	0.68	31	5.30	4.3	128	0.79	70	3	4.3	0.02	0.43	9	7	253	56	22.1	0.35	1.58	93	26	28.0	0.16	0.57	1,227	83	6.8	0.51	7.6	Not Notifiable.	16	...	0.10	...	...	359	2.22	49	0.30	64	0.40	...	368	2.28	...	...	138	0.86	...	...	506	3.13	...	1885	
1890	152,866	36.0	23.4	169	4	3	0.45	30	4.56	1.9	184	1.01	4	...	...	...	0.02	17	3	198	35	17.7	0.19	1.08	181	44	24.3	0.24	0.99	613	26	4.2	0.14	3.3		25	...	0.14	...	...	7	0.04	80	0.44	92	0.50	...	383	2.10	...	...	186	1.02	...	...	560	3.12	...	1890	
1891	156,976	35.7	23.6	175	5	2	0.30	30	4.49	2.5	112	0.60	...	...	...	...	...	19	2	134	24	17.9	0.13	0.72	121	42	34.7	0.22	0.65	785	39	5.0	0.21	4.2		11	...	0.06	...	...	128	0.68	179	0.96	107	0.57	...	398	2.13	...	...	259	1.39	...	...	657	3.62	...	1891	
1892	159,770	34.6	19.8	150	7	2	0.30	41	6.23	1.5	114	0.60	4	1	25.0	0.00	0.02	...	...	97	14	14.4	0.07	0.51	156	41	26.3	0.22	0.82	963	29	3.0	0.15	5.1		8	...	0.04	...	...	67	0.35	75	0.40	105	0.56	...	409	2.16	...	...	204	1.08	...	...	613	3.23	...	1892	
1893	162,478	34.4	21.4	174	4	2	0.30	38	5.74	2.4	196	1.02	25	...	...	...	...	...	...	141	25	17.7	0.13	0.73	171	28	16.4	0.15	0.89	693	23	3.3	0.12	3.6		8	...	0.04	...	...	208	1.08	33	0.17	123	0.64	...	347	1.81	...	...	190	0.99	...	...	537	2.78	...	1893	
1894	165,255	32.0	18.5	157	4	1	0.16	38	6.08	2.0	124	0.63	2	...	...	...	...	...	...	164	30	18.3	0.15	0.84	112	27	24.1	0.14	0.57	826	27	3.3	0.14	4.2		7	...	0.04	...	...	94	0.48	149	0.76	116	0.60	...	370	1.90	...	...	167	0.86	...	...	537	2.74	...	1894	
1895	168,141	32.4	20.8	186	13	5	0.78	31	4.82	2.2	248	1.25	...	...	...	...	...	...	...	212	48	22.5	0.24	1.07	174	49	28.2	0.25	0.88	959	26	2.7	0.13	4.8		3	...	0.02	...	...	140	0.71	57	0.29	141	0.71	...	406	2.05	...	...	218	1.10	...	...	624	3.15	...	1895	
1896	201,035	33.3	19.4	165	6	5	0.74	27	4.03	1.9	175	0.87	...	...	...	...	...	...	...	176	33	18.7	0.16	0.87	164	34	20.7	0.17	0.82	896	23	2.6	0.11	4.4		6	...	0.03	...	...	133	0.66	95	0.47	142	0.71	...	401	1.99	...	...	206	1.03	...	...	607	3.02	...	1896	
1897	203,571	33.6	20.0	177	7	3	0.44	34	5.00	1.7	199	0.98	...	...	...	...	...	...	...	307	66	21.5	0.32	1.48	89	27	30.3	0.13	0.43	692	26	3.8	0.13	3.3		4	...	0.02	...	...	96	0.47	62	0.30	143	0.71	...	375	1.84	...	...	213	1.05	...	...	588	2.88	...	1897	
1898	206,950	34.0	22.5	190	2	...	...	21	3.00	2.4	187	0.90	17	3	17.6	0.01	0.08	...	...	...	322	22	16.5	0.10	0.63	107	25	23.4	0.12	0.51	622	28	4.5	0.13		2.9	12	...	0.06	...	...	125	0.60	145	0.70	174	0.84	...	412	1.99	...	...	163	0.79	...	...	575	2.78	...	1898
1899	209,973	34.2	22.0	193	3	...	...	31	4.33	1.7	178	0.85	...	...	...	...	...	...	1	1	133	22	16.5	0.10	0.63	107	25	23.4	0.12	0.51	622	28	4.5	0.13		2.9	7	...	0.06	...	...	79	0.37	89	0.42	161	0.77	...	398	1.90	...	...	182	0.87	...	...	580	2.77	...	1899
1900	213,039	33.4	21.0	169	4	2	0.28	26	3.65	1.4	127	0.60	...	...	...	...	...	...	2	1	76	12	15.8	0.06	0.35	140	36	24.7	0.17	0.67	1,389	42	3.0	0.19		6.4	135	11	...	0.03	0.66	...	87	0.41	81	0.38	174	0.82	...	405	1.90	...	...	584	2.74	...	1900			
1901	216,150	32.0	21.2	177	3	1	0.14	24	3.47	2.2	384	1.78	25	1	4.0	0.00	0.12	2	...	76	12	15.8	0.06	0.35	140	36	24.7	0.17	0.67	1,389	42	3.0	0.19	6.4		179	10	...	0.05	0.83	...	68	0.31	105	0.49	214	0.99	...	428	1.98	...	...	168	0.78	...	...	596	2.76	...	1901
1902	216,275	33.6	19.9	139	1	1	0.14	39	5.37	1.6	103	0.47	13	1	7.7	0.00	0.06	1	1	57	8	14.0	0.04	0.26	133	21	15.8	0.10	0.61	1,382	59	4.3	0.27	6.4		191	9	...	0.06	0.83	...	137	0.63	98	0.45	197	0.91	...	367	1.65	...	...	168	0.78	...	...	596	2.76	...	1902
1903	217,010	31.8	19.1	166	7	4	0.58	20	2.90	1.1	192	0.88	155	9	5.8	0.04	0.71	3	...	75	9	12.0	0.04	0.35	147	36	24.6	0.17	0.68	1,175	31	2.6	0.14	5.4		191	9	...	0.04	0.88	...	12	0.06	52	0.24	200	0.92	...	371	1.71	...	...	572	2.64	...	1903				
1904	217,862	31.6	19.5	155	5	5	0.73	30	3.64	1.6	102	0.74	351	17	4.8	0.08	1.6	...	...	30	7	23.3	0.03	0.14	235	47	20.0	0.22	1.08	886	25	2.8	0.12	4.1		206	8	...	0.04	0.95	...	56	0.26	124	0.57	209	0.96	...	377	1.73	...	...	177	0.81	...	...	554	2.55	...	1904
1905	255,160	33.2	18.0	138	5	4	0.47	23	2.24	1.4	228	0.89	103	2	1.9	0.00	0.40	...	...	50	11	22.0	0.04	0.20	288	52	18.1	0.21	1.13	705	14	2.0	0.06	2.8		213	7	...	0.03	0.84	...	37	0.14	88	0.34	231	0.91	...	397	1.56	...	...	211	0.83	...	...	596	2.76	...	1905
1906	257,113	31.9	18.8	153	6	2	0.24	19	2.07	2.2	369	1.44	8	...	...	...	0.03	...	...	70	13	18.6	0.05	0.27	364	66	18.1	0.25	1.41	733	17	2.3	0.07	2.9		187	5	...	0.02	0.73	...	163	0.63	58	0.23	222	0.87	...	401	1.56	...	...	592	2.39	...	1906				
1907	259,082	31.2	17.8	125	4	2	0.25	16	1.73	1.5	111	0.43	1	...	...	...	0.00	3	...	66	11	16.6	0.04	0.25	383	62	13.6	0.20	1.47	614	22	3.6	0.08	2.4		180	4	...	0.02	0.70	...	116	0.45	130	0.50	238	0.92	...	398	1.53	...	...	580	2.77	...	1907				
1908	261,065	32.1	18.4	139	6	2	0.24	27	2.99	1.4	253	0.97	...	...	...	...	...	...	...	111	14	12.6	0.05	0.42	335	36	10.7	0.14	1.28	394	10	2.5	0.04	1.5		147	1	...	0.00	0.56	...	30	0.12	131	0.50	279	1.0													







## GENERAL STATISTICS.

**POPULATION.**—As estimated by the Registrar General at the middle of the year 1933—286,500.

RETURN SHEWING THE ESTIMATED POPULATION OF THE DIFFERENT  
WARDS IN THE CITY, ACREAGE, POPULATION PER ACRE, ETC.

Ward.	Population (estimated).	Gross Area in acres.	Less for Public Open Spaces in acres.	Net Area in acres.	Population per acre.	
					Gross.	Net.
St. Nicholas' .....	2,169	127	1	126	17	17
St. Thomas' .....	13,855	1,644	1,101	543	8	25
St. John's .....	13,617	169	2	167	80	81
Stephenson.....	18,269	212	...	212	86	86
Armstrong .....	14,455	176	31	145	82	100
Elswick .....	13,182	250	18	232	53	57
Westgate .....	13,613	90	1	89	151	153
Arthur's Hill .....	9,292	142	6	136	65	68
Benwell.....	19,482	551	31	520	35	37
Fenham .....	24,972	1,190	68	1,122	21	22
All Saints'.....	14,700	178	2	176	83	84
St. Andrew's .....	10,515	174	2	172	60	61
Jesmond .....	11,075	443	46	397	25	28
Dene .....	17,603	821	114	707	21	25
Heaton .....	13,243	225	28	197	59	67
Byker .....	15,754	139	...	139	113	113
St. Lawrence .....	17,737	180	7	173	99	103
St. Anthony's.....	15,532	598	21	577	26	27
Walker.....	27,425	1,149	41	1,108	24	25
CITY .....	286,500	8,458	1,520	6,938	34	41

**INHABITED HOUSES.**—70,148 inhabited houses, which, on the estimated population, shows an average of 4.03 persons per dwelling.

**RATEABLE VALUE.**—£2,340,043. A penny rate produced £9,197.



**SOCIAL CONDITIONS.**—The principal **Trades and Occupations** are of a healthy nature, being generally engineering and machine making; conveyance of men, goods, and messages; building and works of construction, *e.g.*, ship building; and connected with ships and boats, sea-faring and harbour work; food, tobacco, drink, and lodging; coal and shale mines; and commercial or business occupations.

The amount of **Public Assistance** granted during the year ended 31st March, 1933, was £327,559 for out-door relief, and £26,679 for indoor maintenance, making a total of **£354,238**, as compared with **£278,898** in the previous year.

The number of registered male unemployed was 29,499 at the beginning of the year, and 25,090 at its close, whilst the figures for females were 3,493 and 2,438 respectively.

The City contains many **Hospitals** and other medical charities, but since wide surrounding districts are also served by them, figures as to patients treated are not of local value. A list of municipal and voluntary hospitals serving the city is given on page 51.

**MARRIAGES.**—2,270 marriages took place during the year, as compared with 2,168 in 1932, and 2,062 in 1931.

**BIRTHS.**—4,712, equivalent to a rate of 16.4 per 1,000 population.

**DEATHS.**—(All causes)—4,695 equivalent to a gross rate of 16.4 per 1,000 population, and, after deduction of the deaths of 1,182 non-citizens, and addition of 127 Newcastle residents who died elsewhere, to a net rate of 12.7 per 1,000 population. In 1932 the death rate was 12.4.

17 *Orders for Burial* (Newcastle-upon-Tyne Improvement Act, 1882, Sec. 47) were made, 6 being in respect of bodies lying in inhabited rooms, and 11 being cases from hospital.



## TOTAL DEATHS DURING RECENT YEARS FROM CERTAIN CLASSES OF DISEASE.

Classification in Table III. of Ministry of Health.

	Nervous System.	Circu- latory.	Respira- tory.	Digestive.	External Causes.
1912	410	435	603	204	152
1913	457	453	722	332	114
1914	448	505	863	465	142
1915	470	635	873	361	163
1916	477	448	856	281	117
1917	497	478	864	268	135
1918	498	503	957	252	135
1919	439	497	1,040	272	133
1920	384	534	861	275	124
1921	347	581	726	297	113
1922	363	689	913	181	92
1923	363	623	623	219	112
1924	376	667	749	206	110
1925	359	696	681	248	131
1926	335	742	596	220	158
1927	328	751	615	204	123
1928	331	796	480	247	153
1929	311	893	577	226	148
1930	256	874	469	227	137
1931	250	991	509	195	158
1932	232	976	413	201	161
1933	237	1,003	362	213	151

## CANCER DEATHS IN AGES (MALE AND FEMALE), 1933.

Site.	Sex.	Under 1 year.	1—2 Years.	2—5 Years.	5—15 Years.	15—25 Years.	25—45 Years.	45—65 Years.	65 Years and over.	Total.
Cancer of the buccal cavity and pharynx	M.	...	...	...	...	...	2	11	5	18
	F.	...	...	...	...	...	...	1	...	1
Cancer of the diges- tive system ...	M.	...	...	...	1	...	6	57	65	129
	F.	...	...	...	1	...	4	49	60	114
Cancer of the respi- ratory organs ...	M.	...	...	...	...	...	3	8	5	16
	F.	...	...	...	...	...	...	5	1	6
Cancer of the uterus	F.	...	...	...	...	...	4	24	12	40
Cancer of other female genital organs ...	F.	...	...	...	...	...	...	...	...	...
Cancer of the breast	M.	...	...	...	...	...	...	...	1	1
	F.	...	...	...	...	...	4	6	8	18
Cancer of the male genito-urinary organs ...	M.	...	...	...	...	...	1	3	15	19
Cancer of the skin...	M.	...	...	...	...	...	...	3	3	6
	F.	...	...	...	...	...	1	1	1	3
Cancer of other or unspecified organs	M.	...	...	...	1	1	3	5	7	17
	F.	...	...	...	...	...	2	7	7	16
	M.	...	...	...	2	1	15	87	101	206
	F.	...	...	...	1	...	15	93	89	198
TOTAL ...		...	...	...	3	1	30	180	190	404

The average age at death for males was 61 and females 62.



**INFANTILE MORTALITY.**—359 infants died before completing the first year of life, representing a rate of 76 deaths per 1,000 live births.

**ZYMOTIC DEATH RATE.**—There were 173 deaths from the “ Chief Zymotic Diseases ”—smallpox, measles, scarlet fever, diphtheria, whooping cough, fever (typhus, simple continued, and enteric) and diarrhoea (all ages)—equivalent to 0.60 deaths per 1,000 population.

**TUBERCULOSIS.**—329 persons died from various forms of tuberculosis, 262 being from pulmonary, and 67 from non-pulmonary. The equivalent death rates are: *all forms* 1.14, *pulmonary* 0.91, and *non-pulmonary* 0.23 per 1,000 population.

For comparison of death rates with previous years see large table page 41A.

For particulars of deaths as to site of disease, age, etc., see table page 46A.

**GEOLOGY.**—The geological formation of the area consists of heavy clay on the top of hard sandstone, which overlies coal seams.

**CLIMATOLOGY.**—The following is a brief summary of the main features of the weather in 1933, as recorded on the “ Newcastle Chronicle’s ” instruments :—

The mean barometer reading was 29.7 inches. The mean maximum and minimum temperatures were 63.0 F. and 41.2 F. respectively.

The rainfall for the year was 23.72 inches, 0.60 inches less than that of 1932 (24.32).

The following table shows the frequency of the directions of the wind :—

W.	on 23 days.
N.W.	on 157 „
N.E.	on 39 „
E.	on 11 „
S.E.	on 66 „
S.W.	on 63 „
S.	on 2 „
N.	on 4 „



### Sunshine.

Sunshine records have been available by the courtesy of Professors G. W. Todd and J. A. Hanley, of Armstrong College. The observations are taken at Cockle Park Farm (fifteen miles north of the City, and in a rural area), and at the College itself. During the year 1,176 hours of sunshine were registered in the City, as compared with 1,425 at Cockle Park.

**WATER SUPPLY.**—The City is served by the Newcastle and Gateshead Water Company with a plentiful supply of pure upland surface water, collected from large catchment areas at Catcleugh, close to the Cheviots, and in lower Northumberland. It is stored in large impounding reservoirs at Catcleugh, Hallington, and Whittle Dene, and passes through filters at Whittle Dene and Throckley. It was found, however, that filtration did not secure the degree of freedom from bacteria which was desirable, and during the last few years it has been supplemented by chlorination, with marked improvement.

In the vast majority of cases the household taps are served directly from the mains without intervening cisterns. A separate trade supply is piped to some of the great riverside works from a point above the filters.

The bacteriological reports upon the water are given on page 104.

**SEWERAGE.**—There are 349 miles of sewers discharging directly into the Tyne, which is tidal, at various points along the  $8\frac{1}{4}$  miles of river frontage.

**CLEANSING AND SCAVENGING.**—A weekly collection of refuse is made from 75 per cent. of premises and twice weekly from the remainder.

There are 74,641 dry ashtubs and galvanised iron bins, 105 dry ashpits, and 82 conservancy system closets in the City. Conversion of the latter is proceeding steadily and during 1933, 178 pail-closets, 14 combined privies and ashpits, and 2 cell privies were removed and water closets substituted. 4 dry ashpits were also removed and dustbins substituted. All the schools are served by the water-carriage system.



### ADOPTIVE AND LOCAL ACTS IN FORCE.

Adopted Acts.—Infectious Disease (Prevention) Act, 1890.  
Section 4.

Public Health Acts Amendment Act, 1890.—Part III.—  
Whole of ; Part IV.—Whole of.

Public Health Acts Amendment Act, 1907.—Part II.—Sec-  
tions 20, 22, 23, 26, 27, 28, 29, 30, 31 and 33 ; Part III.—Sections  
34, 35, 36, 37, 38, 43, 45, 48, 49, 50 and 51 ; Part IV.—Sections  
52, 53, 56, 58, 59, 61, 62, 63, 64, 65 and 68 ; Part X.—Whole of.

Public Health Act, 1925.—Part II., Sections 15, 21, 22, 23,  
24, 25, 26, 27, 28, 30, 31, 32, 33 and 35 ; Part III.—Whole of ;  
Part IV.—Whole of ; Part V.—Whole of.

Local Acts.—Newcastle-upon-Tyne Improvement Act, 1837.

„	„	1846.
„	„	1853.
„	„	1865.
„	„	1870.
„	„	1882.
„	„	1892.

Newcastle-upon-Tyne Tramways and Improvement Act, 1899.

Newcastle-upon-Tyne Corporation Act ... .. 1911.

Newcastle-upon-Tyne Corporation Act ... .. 1926.



CAUSE OF DEATH.	AGE PERIODS.										WARDS—NET DEATHS.																															
	GROSS.										NET.										WARDS—NET DEATHS.																					
	Under 1 year.	1 year and under 2.	2 years and under 5.	5 years and under 15.	15 years and under 25.	25 years and under 45.	45 years and under 65.	65 years and above.	Total (Gross).	Under 1 year.	1 year and under 2.	2 years and under 5.	5 years and under 15.	15 years and under 25.	25 years and under 45.	45 years and under 65.	65 years and above.	Total (Net).	St. Nicholas'.	St. Thomas'.	St. John's.	Stephenson.	Armstrong.	Elwick.	Westgate.	Arthur's Hill.	Bevell.	Fenham.	All Saints'.	St. Andrew's.	Jesmond.	Dene.	Heaton.	Byker.	St. Lawrence.	St. Anthony's.	Walker.	Inward.	Outward.	Trans-ferable Deaths.	Deaths in the City of Non-Residents.	
I.—EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES.																																										
Euteric Fever.....	7	16	14	1	1	2	1	...	37	7	15	14	1	...	2	1	...	37	1	1	3	4	3	1	2	...	1	...	6	2	1	1	1	1	...	...	...	1	2	...	4	
Measles.....	3	3	7	6	4	1	...	...	21	11	10	3	1	...	...	...	...	18	...	...	3	4	1	2	...	...	...	1	...	2	1	1	1	...	...	...	...	...	...	...	3	
Scarlet Fever.....	10	11	4	1	...	...	...	...	26	11	10	3	1	...	...	...	...	25	...	...	3	4	1	2	...	...	...	1	...	2	1	1	1	...	...	...	...	...	...	...	10	
Whooping Cough.....	3	1	3	4	7	27	42	69	111	3	1	3	3	7	26	41	69	153	...	9	10	8	3	16	10	6	...	6	16	8	7	9	8	4	...	...	...	...	...	...	27	
Diphtheria.....	3	1	3	4	7	27	42	69	111	3	1	3	3	7	26	41	69	153	...	9	10	8	3	16	10	6	...	6	16	8	7	9	8	4	...	...	...	...	...	...	11	
Influenza.....	1	1	1	1	1	...	...	...	17	3	2	1	...	1	...	...	...	12	...	...	1	1	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	
Dysentery.....	4	2	1	1	1	...	...	...	17	3	2	1	...	1	...	...	...	12	...	...	1	1	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	
Erysipelas.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Acute Poliomyelitis.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Acute Polioencephalitis.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Encephalitis Lethargica.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Cerebro-Spinal Fever.....	8	7	6	7	7	6	1	2	41	6	6	4	6	3	2	1	...	26	...	...	1	5	2	1	1	...	1	1	5	...	...	2	1	1	1	...	...	...	...	...	...	
Tetanus.....	...	...	...	1	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Tuberculosis of the Respiratory System.....	3	1	2	15	60	119	61	6	267	1	...	...	...	...	...	...	...	33	3	5	15	18	9	12	7	8	13	24	15	15	3	10	6	23	20	30	26	9	14	126		
Tuberculosis of the Central Nervous System.....	3	4	12	19	7	6	2	3	5	3	3	6	14	4	1	2	2	12	...	1	2	2	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Tuberculosis of the Peritoneum and Intestines.....	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Tuberculosis of the Vertebral Column.....	...	...	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Tuberculosis of the Joints.....	...	...	1	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Tuberculosis of the Lymphatic System.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculosis of Genito Urinary System.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculosis of other Organs.....	...	...	1	...	...	...	...	...	3	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Disseminated Tuberculosis.....	2	1	1	7	4	5	3	...	23	1	...	1	5	3	5	1	...	16	1	...	1	2	...	1	2	...	1	1	1	...	...	2	...	...	...	...	...	...	...	...	...	
TOTAL TUBERCULOSIS.....	9	6	16	43	81	137	68	9	369	6	3	10	32	73	130	65	10	329	5	8	17	21	14	14	10	11	17	25	20	15	6	11	10	28	24	38	36	10	50	207		
Syphilis.....	1	...	...	1	...	6	4	1	12	1	...	...	...	...	5	4	1	11	...	...	...	2	...	...	...	3	1	...	...	2	...	...	...	1	...	1	...	...	...	...	...	
Pyæmia, Septicæmia.....	2	1	1	3	6	5	6	1	25	...	1	1	1	3	4	2	...	12	...	...	1	...	...	1	...	1	2	1	2	...	...	1	...	...	2	...	1	...	...	...	...	
Mycosis.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Pink Disease.....	...	1	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Malaria.....	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
II.—CANCER AND OTHER TUMOURS.																																										
Cancer of the Buccal Cavity.....	...	...	...	...	...	2	17	6	25	...	...	...	...	...	2	12	5	19	...	...	2	3	1	2	2	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	
Cancer of the Digestive Organs and Peritoneum.....	...	...	...	2	...	19	168	154	343	...	...	...	2	...	11	105	125	243	3	11	10	18	15	16	16	10	19	25	11	3	8	15	17	9	15	8	14	5	105	178		
Cancer of the Respiratory Organs.....	...	...	...	...	...	5	20	7	32	...	...	...	...	...	3	13	6	22	...	2	2	...	1	2	1	2	...	...	3	3	2	3	2	1	2	1	2	1	11	17	15	
Cancer of the Uterus.....	...	...	...	...	...	6	21	8	35	...	...	...	...	...	4	18	8	30	...	...	1	2	...	3	3	2	1	3	3	2	...	...	...	...	...	...	...	...	...	...	...	
Cancer of the Female Genital Organs.....	...	...	...	...	...	1	9	4	14	...	...	...	...	...	...	6	4	10	...	1	1	...	2	...	...	...	...	2	...	1	1	...	...	...	...	...	...	...	...	...	...	
Cancer of the Breast.....	...	...	...	...	...	1	5	9	15	...	...	...	...	...	4	6	10	19	...	2	1	...	1	1	1	...	1	4	...	3	2	1	...	...	...	...	...	...	...	...	...	
Cancer of Male Genito Urinary System.....	...	...	...	...	...	1	6	19	26	...	...	...	...	...	1	4	14	19	...	...	...	...	2	...	5	...	3	...	1	...	1	...	2	2	...	...	...	...	...	...	...	
Cancer of the Skin.....	...	...	...	...	...	1	5	4	10	...	...	...	...	...	1	4	4	9	1	...	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	
Cancer of other or unspecified Organs.....	...	...	...	2	1	7	22	15	47	...	...	...	...	...	1	1	4	33	...	3	...	1	2	1	3	1	...	3	1	1	2	4	3	2	3	1	2	...	14	23	9	
Tumours (not malignant).....	...	...	...	2	3	5	3	13	17	...	...	...	...	...	...	3	2	6	...	...	...	...	2	...	...	...	...	...	1	...	...	...	1	2	...	...	...	...	...	...	...	
Tumours of undetermined nature.....	1	...	...	4	2	6	13	4	30	...	...	...	1	1	1	3	3	9	...	...	2	...	...	...	...	...	2	...	1	...	...	1	1	...	...	...	...	...	...	...	...	
III.—RHEUMATISM, DISEASES OF NUTRI-TION AND OF ENDOCRINE GLANDS AND OTHER GENERAL DISEASES.																																										
Rheumatic Fever.....	...	...	...	8	4	5	3	2	22	...	...	...	4	4	2	2	2	16	...	...	1	...	1	2	1	...	2	1	...	1	...	...	1	1	...	2	1	...	...	...	...	...
Chronic Rheumatism.....	...	...	...	...	...	2	4	8	14	...	...	...	...	...	2	3	7	12	...	...	...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Diabetes.....	...	...	1	...	3	11	24	32	71	...	...	...	...	...	3	14	24	41	...	3	...	2	...	2	...	2	1	3	1	2	5	4	2	2	4	1	...	...	...	...	...	
Rickets.....	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Diseases of the Pituitary Gland.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Diseases of the Thyroid and Parathyroid Glands.....	...	...	...	1	3	1	4	1	10	...	...	...	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Exophthalmic Goitre.....	...	...	...	2	4	1	1	1	8	...	...	...	...	...	2	...	1	3	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Diseases of the Thymus.....	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Diseases of the Adrenals.....	...	...	...	...	...	...	...	...	...	...	...	...</																														



[illegible]



VITAL STATISTICS, YEAR 1933, AND INFECTIOUS DISEASES.

COMPARISON WITH OTHER DISTRICTS.

DISTRICT.	Birth Rate.	General Death Rate.	Infantile Mortality Rate.	Death Rate per 1,000 from Enteric Fever, Smallpox, Scarlet Fever, Measles, Whooping Cough, and Diphtheria.	Tubercu-losis (all forms) Death Rate.	ATTACK RATE PER 1,000 POPULATION.					ATTACK RATE PER 1,000 BIRTHS. (live & still)	
						Small-pox.	Typhus.	Scarlet Fever.	Diph-theria.	Enteric Fever and Con-tinued Fever.		Ery-sipelas.
England and Wales.....	14.4	12.3	64	0.19	†	0.02	...	3.21	1.18	0.04	0.45	3.5
118 Great Towns (includ. London)	14.4	12.2	67	0.22	†	...	...	...	...	...	...	...
NEWCASTLE-UPON-TYNE .....	16.4	12.7	76	0.32	1.14	...	...	7.10	0.32	0.03	0.91	2.04
Hull.....	17.9	13.1	77	0.40	1.10	...	...	1.33	4.74	0.03	0.46	1.30
Leeds .....	13.7	13.5	81	0.31	1.03	...	...	3.93	2.18	0.02	0.73	5.59
Bradford .....	13.2	14.8	81	0.21	0.89	...	...	3.40	1.29	0.05	0.58	0.04
Sheffield.....	14.0	11.9	63	0.09	0.84	...	...	2.84	1.88	0.00	0.65	6.64
Manchester .....	14.4	13.4	75	0.26	1.15	...	...	2.30	0.95	0.02	0.49	10.94
Salford .....	15.3	13.9	80	0.21	1.32	...	...	2.67	3.50	0.32	0.58	6.02
Liverpool .....	19.5	14.4	98	0.69	1.34	0.00	0.00	6.10	3.37	0.08	1.06	2.50
Nottingham .....	15.8	13.3	85	0.26	1.04	...	...	2.14	0.56	0.01	0.46	2.59
Leicester.....	13.4	12.8	75	1.05	1.13	...	...	1.79	1.40	0.41	0.62	2.44
Stoke-on-Trent .....	16.2	12.9	89	0.11	1.03	0.00	0.00	1.03	0.85	0.01	0.59	0.6
Birmingham.....	14.7	11.0	66	0.16	0.96	0.00	0.00	2.58	0.41	0.03	0.53	4.78
Cardiff.....	15.5	13.6	77	0.31	1.26	...	...	5.89	2.14	0.02	0.29	5.89
Bristol .....	13.7	12.0	55	0.14	0.95	0.00	0.00	1.88	1.56	0.03	0.41	0.68
Portsmouth.....	15.7	12.4	51	0.15	0.79	...	...	3.43	0.77	0.00	0.29	3.14
London (County) .....	13.2	12.4	60	0.21	0.93	0.12	...	5.11	2.23	0.04	0.65	4.51
Gateshead .....	18.0	13.2	75	0.28	1.37	...	...	7.08	0.37	0.01	0.77	1.27
South Shields.....	17.2	13.7	93	0.49	1.84	...	...	1.04	0.22	...	0.51	1.46
Tynemouth .....	17.2	13.3	84	0.23	0.99	0.00	0.00	3.75	0.27	0.01	0.32	1.67
Sunderland .....	19.8	13.5	89	0.28	1.18	0.00	0.00	8.09	0.39	0.04	0.89	4.05
Middlesbrough .....	19.1	13.3	91	0.18	1.64	...	...	5.74	0.65	0.01	0.77	7.14
*County of Northumberland.....	15.4	12.0	71	0.15	0.85	...	...	5.91	0.36	0.25	0.54	2.13
*County of Durham .....	17.9	11.7	80	0.23	0.89	...	...	5.92	1.20	0.05	0.58	1.23

\* Administrative County.

† Not available.



### Vital Statistics of Whole District during 1933 and previous Years.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS		NET DEATHS BELONGING TO THE DISTRICT.			
		Uncor- rected Number	Net.		Number	Rate.	of Non- resi- dents regis- tered in the District	of Resi- dents not reg- istered in the District	Under 1 Year of Age.		At all Ages.	
			Number	Rate.					Number	Rate per 1,000 Nett Births.	Number	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1911	267,261	7,089	7,082	26.5	4,667	17.5	448	165	973	137	4,384	16.4
1912	269,193	7,219	7,194	26.7	4,221	15.7	529	146	727	101	3,838	14.5
1913	271,295	7,480	7,460	27.5	4,611	17.0	560	141	908	122	4,192	15.5
1914	271,523	7,564	7,538	27.8	5,069	18.7	546	138	1,029	137	4,660	17.2
1915	278,107	7,575	7,545	27.8	5,257	18.9	693	207	1,007	133	4,771	17.2
1916	278,107	7,332	7,248	26.2	4,875	17.5	680	232	899	123	4,427	15.9
1917	278,107	6,548	6,495	23.4	4,646	16.7	718	246	732	113	4,174	15.0
1918	278,107	6,555	6,468	23.3	5,380	19.3	872	308	692	107	4,816	17.3
1919	275,099	6,793	6,674	23.3	5,358	19.5	737	234	806	120	4,855	17.6
1920	286,061	8,433	8,070	28.0	4,609	16.1	779	195	817	101	4,025	14.0
1921	278,400	7,720	7,284	26.2	4,602	16.5	817	142	699	96	3,927	14.1
1922	281,600	7,432	6,987	24.8	4,698	16.7	831	145	646	92	4,012	14.2
1923	283,800	6,961	6,367	22.4	4,298	15.1	789	150	623	98	3,659	12.9
1924	285,900	7,029	6,335	22.2	4,607	16.1	929	172	632	100	3,850	13.5
1925	286,300	7,031	6,215	21.6	4,732	16.5	989	165	550	88	3,908	13.6
1926	284,700	6,728	6,007	21.0	4,460	15.7	979	161	530	88	3,642	12.8
1927	288,500	6,215	5,395	18.7	4,468	15.5	1,058	178	474	88	3,588	12.4
1928	281,500	6,360	5,429	19.2*	4,683	16.6	1,178	179	447	82	3,684	13.1
1929	283,400	6,120	5,126	18.1	5,040	17.8	1,313	172	438	85	3,899	13.8
1930	283,400	6,190	5,223	18.4	4,665	16.5	1,232	133	384	74	3,566	12.6
1931	283,600	6,058	5,056	17.8	4,911	17.3	1,251	145	467	92	3,805	13.4
1932	285,100	6,006	4,883	17.1	4,579	16.0	1,174	134	370	76	3,539	12.4
1933	286,500	5,770	4,712	16.4	4,695	16.4	1,182	127	359	76	3,640	12.7

\* Calculated on a population of 282,200.

### Corrected Death Rates in different Wards, 1933.

St. Nicholas'.	St. Thomas'.	St. John's.	Stephenson.	Armstrong.	Elswick.	Westgate.	Arthur's Hill.	Benwell.	Fenham.	All Saints'.	St. Andrew's.	Jesmond.	Dene.	Heaton.	Byker.	St. Lawrence.	St. Anthony's.	Walker.	City.
9.7	10.7	16.0	14.8	12.9	17.4	14.8	13.3	10.5	11.0	14.5	13.3	12.8	10.6	12.2	12.2	10.6	16.0	10.7	12.7

All deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong.



# CAUSES OF DEATH AT DIFFERENT PERIODS OF LIFE FOR 1933.

(REGISTRAR GENERAL'S RETURN.)

CAUSES OF DEATH.	Sex	All Ages	0—	1—	2—	5—	15—	25—	35—	45—	55—	65—	75—
All Causes	M. F.	1888 1757	209 149	63 48	48 49	56 59	86 70	87 103	129 107	198 162	325 267	419 381	268 362
1—Typhoid and Paratyphoid Fevers	M. F.	1 2	... ...	... ...	... ...	... ...	... ...	1 1	... ...	... 1	... ...	... ...	... ...
2—Measles	M. F.	15 22	3 4	7 8	5 9	... 1	... ...	... ...	... ...	... ...	... ...	... ...	... ...
3—Scarlet Fever	M. F.	11 7	... ...	1 2	4 2	3 2	3 1	... ...	... ...	... ...	... ...	... ...	... ...
4—Whooping Cough	M. F.	11 16	3 8	5 5	3 2	... 1	... ...	... ...	... ...	... ...	... ...	... ...	... ...
5—Diphtheria	M. F.	4 5	... 1	... ...	4 2	... 1	... ...	... ...	... 1	... ...	... ...	... ...	... ...
6—Influenza	M. F.	68 78	... 2	1 ...	1 2	2 1	4 1	4 5	7 7	15 6	9 12	11 15	14 27
7—Encephalitis Lethargica	M. F.	5 1	... ...	... ...	... ...	... ...	1 1	2 ...	... ...	... ...	... ...	2 ...	... ...
8—Cerebro-spinal Fever	M. F.	14 11	4 2	2 3	2 2	4 1	1 1	... 1	1 ...	... ...	... 1	... ...	... ...
9—Tuberculosis of respiratory system	M. F.	147 118	1 ...	... ...	1 1	6 7	26 37	39 35	32 15	21 12	17 8	3 3	1 ...
10—Other Tuberculous diseases	M. F.	34 33	2 3	3 ...	3 4	8 12	10 4	2 3	4 1	1 2	... 2	1 1	... 1
11—Syphilis	M. F.	12 5	... 1	... ...	... ...	... ...	... ...	... ...	6 ...	3 1	2 2	1 1	... ...
12—General paralysis of the insane, tabes dorsalis	M. F.	9 1	... ...	... ...	... ...	... ...	... ...	... ...	4 ...	... 1	4 ...	1 ...	... ...
13—Cancer, malignant disease	M. F.	208 205	... ...	... ...	... ...	2 1	1 ...	3 ...	11 16	31 39	58 59	79 69	23 21
14—Diabetes	M. F.	14 30	... ...	... ...	... ...	... ...	... ...	... ...	1 4	1 ...	5 7	3 11	4 8
15—Cerebral hæmorrhage, etc.	M. F.	63 61	... ...	... ...	... ...	... ...	... ...	... ...	1 1	4 7	15 11	31 22	12 20
16—Heart disease	M. F.	365 339	... ...	... ...	1 ...	3 5	5 5	3 12	13 15	33 28	88 60	130 104	89 110
17—Aneurysm	M. F.	7 4	1 ...	1 ...	... ...	... ...	... ...	1 ...	... 2	1 1	2 ...	1 1	... ...
18—Other circulatory diseases	M. F.	126 124	1 ...	... ...	... ...	... ...	... ...	... ...	... ...	10 7	20 18	48 41	47 58



Causes of Death at different periods of life  
for 1933—*continued*.

CAUSES OF DEATH.	Sex	All Ages	0—	1—	2—	5—	15—	25—	35—	45—	55—	65—	75—
19—Bronchitis	M. F.	74 70	9 6	3 3	1 2	... 1	... 2	4 2	... 1	7 4	9 5	26 13	15 31
20—Pneumonia (all forms)	M. F.	125 86	29 16	20 13	8 9	9 5	2 2	7 3	11 7	13 10	13 5	6 11	7 5
21—Other respiratory diseases	M. F.	15 22	1 ...	1 1	1 ...	... ...	... 1	1 2	2 2	2 2	1 4	5 5	1 5
22—Peptic ulcer	M. F.	22 8	... ...	... ...	... ...	... ...	1 ...	1 1	7 2	5 1	5 2	2 2	1 ...
23—Diarrhoea, etc.	M. F.	40 32	27 18	6 5	1 ...	2 ...	1 1	... ...	... 1	... ...	1 4	1 3	1 ...
24—Appendicitis	M. F.	12 11	... ...	1 ...	... ...	1 ...	1 3	2 ...	2 1	2 1	2 2	1 2	... 2
25—Cirrhosis of liver	M. F.	3 2	... ...	1 ...	... ...	... ...	... ...	... ...	... ...	1 1	1 ...	... 1	... ...
26—Other diseases of liver, etc.	M. F.	1 14	... ...	... ...	... 1	... ...	1 ...	... ...	... 1	... 2	... 6	... 4	... ...
27—Other digestive diseases	M. F.	32 39	6 4	... 1	2 3	2 2	2 ...	2 3	3 2	2 5	7 8	5 10	1 1
28—Acute and chronic Nephritis	M. F.	66 75	... ...	... ...	... 1	... 1	2 1	... 2	5 4	11 7	14 20	23 21	11 18
29—Puerperal Sepsis	F.	9	...	...	...	...	...	6	3	...	...	...	...
30—Other Puerperal causes	F.	8	...	...	...	...	...	5	3	...	...	...	...
31—Congenital Debility, Premature Birth, Malformations, etc.	M. F.	103 74	100 71	2 2	1 ...	... ...	... ...	... ...	... ...	... ...	... 1	... ...	... ...
32—Senility	M. F.	17 46	... ...	... ...	... ...	... ...	... ...	... ...	... ...	... ...	1 ...	2 9	14 37
33—Suicide	M. F.	27 10	... ...	... ...	... ...	... ...	2 1	2 3	2 2	8 ...	8 3	4 ...	1 1
34—Other violence	M. F.	79 44	7 1	4 1	2 2	9 6	14 ...	4 3	7 5	7 2	10 3	7 12	8 9
35—Other defined diseases	M. F.	156 142	15 12	5 4	8 6	5 11	8 9	9 16	10 11	20 22	32 24	26 19	18 8
36—Causes ill-defined, or unknown	M. F.	2 3	... ...	... ...	... 1	... 1	1 ...	... ...	... ...	... ...	1 ...	... 1	... ...

Resident Population 286,500

UNDER 1 YEAR.

	<i>Legitimate.</i>	<i>Illegitimate.</i>
(M.) .....	189	20
(F.) .....	135	14



## HOSPITALS.

Name.	Purpose.	No. of Beds.	For Newcastle Cases.	For Cases from outside City.
<b>MUNICIPAL.</b>				
City Hospital for Infectious Diseases	Infectious Diseases, Tuberculosis ...	338	338	...
Smallpox and Isolation Hospitals	Smallpox and Isolation .....	172	172	...
Newcastle General Hospital	General, Medical, and Surgical	Men 283 Women 288 Children 175	746	...
Barrasford Sanatorium, Barrasford	Tuberculosis .....	90	70	20
Newcastle Mental Hospital, Gosforth	Mental .....	1,060	1,060	...
Shotley Bridge Colony, Shotley Bridge	Mental Defec- tives	400	400	...
St. Mary Magdalene Hospital, Newcastle	Chronic Sick ...	96	96	...
<b>VOLUNTARY.</b>				
Royal Victoria Infirmary, Newcastle	General, Medical and Surgical, Venereal Diseases, etc.	695	200	495
Do.	Convalescents ....	35	...	...
Fleming Memorial Hospital, Newcastle	Children.....	85	30	55
Princess Mary Maternity Hospital, Newcastle	Maternity .....	80	35	45
Eye Infirmary, Newcastle	Eyes.....	32	8	24
Throat, Nose and Ear Hospital, Newcastle	Throat, Nose and Ear	33	...	...
Hospital for Diseases of the Chest, Newcastle	Diseases of the Chest	Out patients	only.	
Catherine House, Newcastle	Maternity .....	21	...	...
Babies' Hospital and Mothercraft Centre, Newcastle	Children.....	24	12	12
Stannington Sanatorium, Stannington	Tuberculosis (Children)	308	30	278
Dental Hospital, Newcastle	Dental .....	Out patients	only.	
Walker Accident Hospital	Shipyard Accidents	20	20	...
Newcastle Dispensary	General, Medical	Out patients	only.	
Hospital for Diseases of the Skin	Skin Diseases ...	6	...	...
Hospital for Women	Women .....	Out patients	only.	...
Sanderson's Home for Crippled Children, Gosforth	Children.....	134	67	67







REPORT OF THE  
MATERNITY AND CHILD WELFARE  
MEDICAL OFFICER.

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II.—THE CHILD.

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INFANTILE MORTALITY, MATERNITY AND  
CHILD WELFARE, NURSING HOMES.







# INFANTILE MORTALITY.

## SUMMARY OF BIRTHS AND DEATHS, 1933.

	LEGITIMATE.			ILLEGITIMATE.			Grand Total.
	M.	F.	Total.	M.	F.	Total.	
Total Births in the year ...	2,832	2,627	5,459	165	146	311	5,770
Net    ,,    ,,    ,,    ...	2,348	2,149	4,497	112	103	215	4,712
Net Deaths under 1 year...	190	134	324	21	14	35	359
Death Rate per 1,000 births	81	62	72	188	136	163	76

## BIRTHS AND DEATHS (NET), 1933.

WARD.	Births.	Deaths under 1 year of age.	Children under 1 year of age— Death rate per 1,000 births.	Birth rate per 1,000 population.
St. Nicholas' .....	13	3	231	6.0
St. Thomas' .....	118	6	51	8.6
St. John's .....	262	29	111	19.2
Stephenson .....	389	39	100	21.3
Armstrong .....	282	22	78	19.5
Elswick .....	204	20	98	15.5
Westgate .....	230	21	91	16.9
Arthur's Hill .....	81	2	25	8.7
Benwell .....	320	20	63	16.4
Fenham .....	337	23	68	13.5
All Saints' .....	314	24	76	21.4
St. Andrew's .....	191	12	63	18.2
Jesmond .....	92	7	76	8.3
Dene .....	174	14	80	9.9
Heaton .....	143	7	49	10.8
Byker .....	287	23	80	18.2
St. Lawrence .....	344	18	52	19.4
St. Anthony's .....	478	37	77	30.9
Walker .....	453	32	71	16.5
CITY .....	4,712	359	76	16.4

All births and deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong.



## ANALYSIS OF INFANTILE MORTALITY.

	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Death-rate of Infants <i>under</i> 1 year per 1,000 births.....	100	88	88	88	82	85	74	92	76	76
Death-rate of Infants <i>under</i> 3 months per 1,000 births...	59.0	53.4	52.9	55.6	50.8	52.5	46.7	48.1	51.2	45.0
Death-rate of Infants from <i>Premature Birth</i> , per 1,000 births .....	26.7	19.0	20.6	22.6	20.6	24.5	17.8	20.2	20.7	20.4
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Premature Birth</i> , plus all <i>Congenital Causes</i> *	45.5	38.6	38.6	38.6	35.4	38.8	33.7	34.2	37.3	36.7
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Diarrhoea and all</i> <i>other Digestive Diseases</i> †...	9.6	11.6	13.1	9.3	13.4	15.0	11.3	12.5	9.2	12.9
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Infantile Atrophy</i> , <i>Debility and Marasmus</i> ...	9.5	10.3	7.7	6.5	4.4	3.7	4.6	2.2	4.9	4.7
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Measles</i> .....	1.10	1.9	1.7	0.6	2.2	3.7	0.5	5.7	0.8	1.5
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Whooping Cough</i> .....	1.9	4.2	3.8	1.3	3.9	1.4	2.5	2.6	2.5	2.3
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Respiratory Diseases</i>	27.9	22.7	18.1	27.1	16.6	16.4	16.8	24.7	16.0	12.9
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Tuberculosis</i> (all forms).....	1.6	0.6	2.0	2.4	1.3	1.0	1.1	2.0	0.8	1.3

For particulars of deaths, as to causes, etc., see Table on page 56A.

\* "*All Congenital Causes*" includes Syphilis, Congenital Defects and Diseases of Early Infancy.

† "*Diarrhoea and all other Digestive Diseases*" includes Diarrhoea, Dysentery, Epidemic or Zymotic Enteritis, Rickets, Diseases of the Stomach, Enteritis, Obstruction of Intestine, Peritonitis and other Diseases of the Digestive System.



CAUSE OF DEATH.	AGE PERIODS.																				Deaths in Institutions in the City of "Residents" or "Non-Residents."
	GROSS.										NET (after allowing for transfers).										
	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	
EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES.																					
Measles .....	...	...	...	...	...	1	1	...	5	7	...	...	...	...	...	1	1	...	5	7	5
Whooping Cough.....	...	...	...	...	...	...	3	1	6	10	...	...	...	...	...	...	3	1	7	11	2
Diphtheria .....	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...	...	...	1	...	1	2
Influenza .....	...	...	...	...	...	1	...	2	...	3	...	...	...	...	...	1	...	2	...	3	...
Dysentery .....	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	1	...	...	1	1
Erysipelas .....	...	...	...	...	...	...	2	2	...	4	...	...	...	...	...	...	2	1	...	3	4
Cerebro-Spinal Fever .....	...	...	...	...	...	1	1	4	2	8	...	...	...	...	...	1	1	2	2	6	6
Tuberculosis of the Respiratory System.....	...	...	...	...	...	...	1	1	1	3	...	...	...	...	...	...	...	...	1	1	2
Tuberculosis of the Central Nervous System.....	...	...	...	...	...	...	1	1	1	3	...	...	...	...	...	...	1	1	1	3	...
Tuberculosis of the Peritoneum and Intestines...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	1	1
Disseminated Tuberculosis.....	...	...	...	...	...	...	1	1	...	2	...	...	...	...	...	...	...	1	...	1	2
TOTAL TUBEROULOSIS.....																					
Syphilis .....	...	...	...	...	...	1	3	3	2	9	...	...	...	...	...	1	1	2	2	6	5
Pyæmia Septicæmia.....	...	...	1	...	1	...	1	...	...	2	...	...	...	...	...	...	...	...	...	...	2
CANCER AND OTHER TUMOURS.																					
Tumors of undetermined nature.....	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
RHEUMATISM, DISEASES OF NUTRITION AND OF ENDOCRINE GLANDS AND OTHER GENERAL DISEASES.																					
Rickets .....	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	1	...	...	1	...
Diseases of the Thymus.....	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	1	...	1	1
DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS.																					
Hæmorrhagic conditions.....	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	1	1
DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS.																					
Meningitis .....	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...	...	...	1	...	1	2
Infantile Convulsions .....	5	...	...	1	6	1	3	1	...	11	5	...	...	1	6	...	3	1	...	10	2
Other Diseases of the Nervous System.....	1	...	...	...	1	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	2
Diseases of the Ear and Mastoid Sinus .....	...	...	...	...	...	...	2	...	2	4	...	...	...	...	...	...	...	...	1	1	4
DISEASES OF THE CIRCULATORY SYSTEM.																					
Acute Endocarditis.....	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	1	1
DISEASES OF THE RESPIRATORY SYSTEM.																					
Diseases of the Larynx .....	1	...	...	...	1	...	...	...	...	1	1	...	...	...	1	...	...	...	...	1	...
Bronchitis .....	...	...	4	1	5	...	4	2	4	15	...	...	4	1	5	...	4	2	4	15	...
Broncho Pneumonia .....	...	1	1	2	4	8	18	7	11	48	...	1	1	2	4	6	14	4	10	38	22
Lobar Pneumonia .....	...	...	...	...	...	...	3	...	...	3	...	...	...	...	...	...	2	...	...	2	1
Pneumonia (not otherwise defined).....	...	...	...	...	...	...	3	1	1	5	...	...	...	...	...	...	3	1	1	5	1
Carried forward.....	7	1	6	4	18	16	46	29	34	143	6	1	5	4	16	11	36	20	33	116	66



## RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 52 WEEKS ENDED 30TH DECEMBER, 1933.

CAUSE OF DEATH.	AGE PERIODS.																			Deaths in Institutions in the City of "Residents" or "Non-Residents."	
	GROSS.										NET (after allowing for transfers).										
	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.		Total under 1 Year of Age.
<i>Brought forward</i> .....	7	1	6	4	18	16	46	29	34	143	6	1	5	4	16	11	36	20	33	116	66
<b>DISEASES OF THE DIGESTIVE SYSTEM.</b>																					
Diseases of the Buccal Cavity, Pharynx, etc.....	...	...	...	...	...	2	...	2	...	4	...	...	...	...	...	1	...	2	...	3	2
Other Diseases of the Stomach.....	...	...	...	...	...	2	1	...	...	3	...	...	...	...	...	2	1	...	...	3	2
Diarrhoea and Enteritis .....	1	1	2	2	6	21	34	13	3	77	1	1	1	2	5	9	22	9	3	48	57
Hernia, Intestinal Obstruction.....	...	...	...	...	...	...	5	3	3	11	...	...	...	...	...	...	3	2	...	5	10
Peritonitis, without stated cause.....	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	1	...	...	1	1
<b>NON-VENEREAL DISEASES OF GENITO-URINARY SYSTEM AND ANNEXA.</b>																					
Other Diseases of the Kidney and Annexa.....	...	1	...	...	1	...	...	1	...	2	...	1	...	...	1	...	...	...	...	1	2
Diseases of the Male Genital Organs .....	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
<b>DISEASES OF SKIN AND CELLULAR TISSUE</b>																					
Carbuncle, Boil.....	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	1	1
Cellulitis, Acute Abscess.....	...	...	...	...	...	...	1	...	1	2	...	...	...	...	...	...	...	...	1	1	1
Other Diseases of the Skin and Annexa.....	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1
<b>DISEASES OF THE BONES AND ORGANS OF LOCOMOTION.</b>																					
Acute Infective Osteomyelitis and Periostitis.....	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	1	...
<b>CONGENITAL MALFORMATIONS.</b>																					
Congenital Malformations .....	16	4	4	4	28	12	5	2	1	48	12	3	1	2	18	4	3	2	...	27	35
<b>DISEASES OF EARLY INFANCY.</b>																					
Congenital Debility.....	7	2	1	2	12	6	7	...	1	26	6	2	1	2	11	5	5	...	1	22	13
Premature Birth .....	104	8	6	5	123	5	...	1	...	129	78	6	6	4	94	1	...	1	...	96	49
Injury at Birth.....	23	1	2	1	27	1	...	1	...	29	11	1	1	1	14	...	...	...	...	14	20
Atelectasis.....	8	...	...	...	8	...	...	...	...	8	5	...	...	...	5	...	...	...	...	5	4
Icterus Neonatorum .....	1	1	...	...	2	...	...	...	...	2	1	1	...	...	2	...	...	...	...	2	1
Other Diseases peculiar to Early Infancy .....	4	1	2	...	7	...	...	...	...	7	4	1	1	...	6	...	...	...	...	6	5
<b>DEATHS BY VIOLENCE.</b>																					
Homicide by other means.....	1	...	...	...	1	...	...	...	...	1	1	...	...	...	1	...	...	...	...	1	...
Accidental Burns (Conflagration excepted).....	...	...	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	2
Accidental Mechanical Suffocation.....	1	1	1	...	3	1	...	...	...	4	1	1	1	...	3	1	...	...	...	4	...
Accidental Injury by Fall, Crushing, etc. ....	...	...	...	...	...	...	...	1	1	2	...	...	...	...	...	...	...	...	1	1	2
Other or unstated Forms of Accidental Violence...	...	1	...	...	1	...	...	...	...	1	...	1	...	...	1	...	...	...	...	1	...
<b>ILL-DEFINED DISEASES.</b>																					
Causes of Death Unstated or Ill-defined.....	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1
<b>TOTAL</b> .....	173	22	24	18	237	68	100	55	47	507	126	19	17	15	177	35	71	36	40	359	276



## Report of the Maternity and Child Welfare Medical Officer.

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TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I have the honour to submit to you my fourteenth annual report.

### General.

The outstanding feature of the year 1933 was the mild weather which prevailed in the City for practically the whole of the year. This is probably reflected in an improvement in the health of the children ; women attending the Centres were urged to keep their children out of doors as much as possible. The Maternal Mortality Rate for the City agains shows a slight improvement, but a substantial increase in the figure for abortions as a cause of death is a point which will require future observation. There was an increase of 114 in the number of expectant mothers attending the Ante-Natal Centres, and the attendances made by these women were in most cases sufficient to ensure efficient medical supervision. A serious want which is generally found to be present in a large number of confinements occurring in poor households is the total absence of bed clothes suitable for the occasion. At the beginning of the year arrangements were concluded with a firm in the City to supply Maternity Outfits which contain certain specified articles put up in a sterilised condition, and packed in sealed packets which are sold at 2/6 each. There has been a steady demand for these outfits.

Another innovation which took place during the year was the establishment of Child Guidance Sessions which are held regularly once a month at two of the Centres. These Clinics are of a specialised nature and demand particular knowledge and experience from those who are going to conduct them. They also of necessity take up a good deal of the Guider's time, and require unlimited patience. Child Guidance, however, has a definite place in Child Welfare, and the present arrangements in the City should only be regarded as a beginning.

Fewer children died in the City in 1933 than in 1932, but as fewer were born the Infantile Mortality Rate is the same for the two years, viz., 76.

The Maternity and Child Welfare Scheme was included in a general survey of the Medical Services of the City made by Medical Officers from the Ministry of Health during the year.



### MATERNITY.

4,712 live and 180 still-born births occurred in the City during the year. 22 women died as a result of childbirth, a death-rate of 4.50 per thousand live and still-births. Of the 22 fatal cases sepsis was responsible for seven deaths, and other puerperal causes (as set out in the following table) for the remaining 15.

The death rates applying are 1.43 per 1,000 live and still-births for sepsis and 3.07 for other puerperal causes.

CAUSES.	1933	1932	1931	1930	1929	1928
Abortions .....	5	2	...	1	1	2
Accidents of Pregnancy.....	...	...	1	2	2	2
Puerperal Hæmorrhage .....	4	3	5	3	4	3
Other Accidents of Childbirth .....	2	4	2	4	5	4
Puerperal Fever .....	7	9	9	14	11	9
Other Toxæmias of Pregnancy.....	2	2	4	2	6	4
Puerperal Phlegmasia.....	...	1	2	2	1	1
Puerperal Insanity .....	...	...	...	...	...	1
Puerperal Disease of Breast.....	...	...	...	...	...	1
Ectopic Gestation .....	...	1	...	...	...	...
Unspecified conditions of puerperal state .....	2	...	...	...	...	...
	22	22	23	28	30	27

### Ante-Natal Supervision.

1,861 expectant mothers attended the City Centres 6,147 times.

The following table shows the attendances at the ante- and post-natal clinics :—

CENTRE.	ANTE-NATAL.		POST-NATAL.	
	Attendance.	Individuals.	Attendance.	Individuals.
Benwell .....	929	300	67	14
Byker .....	1,725	448	20	4
Cowgate .....	449	132	11	7
Diana Street .....	869	300	2	1
Elswick .....	772	266	10	1
Walker .....	505	224	1	1
Wharnccliffe Street ...	898	191	8	5
	6,147	1,861	119	33

### WOMEN ATTENDING ANTE-NATAL CENTRES.

The following details refer to the confinements of 1,567 expectant mothers who attended the municipal ante-natal centres during 1933, and whose children were born during that year.



These mothers were sent to the ante-natal centres by :—

	Cases.	Percentage.
Doctors .....	168	10·7
Midwives .....	375	24·0
Health Visitors on Districts.....	224	14·3
Welfare Centres and Voluntarily.....	800	51·0
	<hr/> 1,567 <hr/>	

The result of the subsequent confinements were :—

Type of Confinement.	Number of Cases.	Resulting in		
		Living Children.	Still-born Children.	Sets of Twins.
Normal.....	1,203	1,164	27	12
Instrumental .....	243	211	28	4
Cæsarian Section .....	9	9	...	...
Induction.....	8	7	1	...
Abortion .....	23	...	...	...
Not Pregnant .....	60	...	...	...
Left City .....	21	...	...	...
Total.....	1,567	1,391	56	16

*Abnormalities* were found in 55 or 3·8 per cent. of the cases, and the ultimate results were as follows :—

Abnormality.	No.	Normal Confinements.			Instrumental Confinements.			Cæsarian Sections.			Induced Labour.		
		No.	Living Children.	Still-born Children.	No.	Living Children.	Still-born Children.	No.	Living Children.	Still-born Children.	No.	Living Children.	Still-born Children.
Breach Presentation	35	18	17	1	14	12	2	2	2	...	1	1	...
Deformed Pelvis ....	5	3	3	...	...	...	...	2	2	...	...	...	...
Albuminuria .....	14	10	8	2	4	4	...	...	...	...	...	...	...
Placenta Prævia ...	1	1	1	...	...	...	...	...	...	...	...	...	...

9 mothers subsequently died :—Septicæmia, 1 ; Hæmorrhage 4; Heart disease, 2; Toxæmia, 2.

### MIDWIVES ACTS.

During the year 48 midwives notified the Local Supervising Authority of their intention to practise in the City, and of these 45 held the examination certificate of the Central Midwives Board, and three were registered as having been in *bona fide* practice before the passing of the 1902 Act.

*Inspections.*—The Superintendent of Midwives carried out the usual routine inspection of midwifery bags, appliances, and records kept by practising midwives, and investigated all cases of ophthalmia neonatorum and puerperal septicæmia occurring in



their practices. For these purposes 595 visits were made. 273 visits to septic patients and 267 to cases of ophthalmia neonatorum were also made.

Through contact with puerperal or some other infectious condition it was necessary to disinfect the clothing and appliances of midwives on seventeen occasions.

*Births attended by Midwives.*—1,738 (net) living births (a decrease of 155 on the previous year) and 50 (net) still-births (three less than in 1932) were attended by midwives during the year. Midwives attended 37 per cent. of the net births in the City. In addition midwives attended in the capacity of maternity nurses with doctors in 347 cases, as compared with 341 in 1932.

*Notices for medical help sent to Local Authority by the midwives :—*

FOR THE MOTHER.		<i>During Puerperium—</i>	
<i>During Pregnancy—</i>		Rise of Temperature .....	18
Ante Partum Hæmorrhage...	27	Eclampsia .....	2
Abortions .....	4	Undefined Illness of Mother	22
Illness .....	13		42
Albuminuria & Puffiness of hands and feet.....	14		
	58	Total calls for mother.....	397
<i>During Labour—</i>			
Uterine Inertia .....	105	FOR CHILD.	
Malpresentations .....	50	Prematurity .....	45
Retained Placenta .....	9	Discharging Eyes.....	15
Post Partum Hæmorrhage...	14	Cyanosis .....	3
Ruptured Perineum.....	118	Congenital Defects .....	5
Placenta Prævia .....	1	Illness of Baby.....	13
	297	Still-births.....	3
		Rashes .....	7
			91
		Total calls for mother and child	488

In 27 per cent. of the midwives' cases the services of a doctor were requisitioned.

*Claims from doctors for fees in respect of calls from midwives :—*

<i>Cases.</i>	
For forceps delivery .....	139
For post partum hæmorrhage...	13
For ante partum hæmorrhage ...	19
For illness of mother.....	47
For illness of child.....	38
For premature birth .....	9
For discharging eyes.....	14
Other .....	103
Specialists called in .....	4
Total cases .....	386



There was a total number of 488 calls for medical aid from midwives, and 79 per cent. of these calls were paid for by the Local Supervising Authority.

Fifteen claims for *payment of midwives' fees* were received.

### Ophthalmia Neonatorum.

The number of cases notified was 56, of which 52 were City cases. All of these were visited. The number is a decrease of 1 on that for 1932. The confinements were attended by :—

Doctors .....	18
Midwives .....	8
Maternity Hospital.....	29
Gables Maternity Home.....	1
	<hr/>
	56
	<hr/>

329 calls were made on the 52 visited cases in the City, and the ultimate results were :—

Recovered completely .....	50
Died .....	1
Removed from City.....	1
	<hr/>
	52
	<hr/>

The *ophthalmia incidence* per 1,000 births for the last five years has been as follows :—

1929 .....	14.0
1930 .....	16.6
1931 .....	10.4
1932 .....	9.2
1933 .....	11.0

### Puerperal Septicæmia and Puerperal Pyrexia.

Eighty-eight cases were notified during the year—37 puerperal fever and 51 pyrexia. Details of these are embodied in the following table :—

	Total Cases Notified.	Newcastle Cases.	Extra Mural Cases.	Admitted to Hospital.	TOTAL DEATHS.	
Puerperal Septicæmia ...	37	10	27	80	Newcastle ...	7
					Extra Mural ...	23
Puerperal Pyrexia ...	51	26	25		Newcastle ...	0
						Extra Mural ...



Of the 36 City cases 34 were visited and the attendants at the confinements are indicated in the following table :—

	<i>Puerperal Septicaemia.</i>	<i>Puerperal Pyrexia.</i>
Doctors.....	3	4
Doctors and Midwives .....	2	4
Midwives .....	1	8
Princess Mary Maternity Hospital Staff .....	2	9
Newcastle General Hospital.....	2	...
Salvation Army Home.....	...	1
	<hr/> 10	<hr/> 26
	<hr/>	<hr/>

### Nursing Homes Registration Act, 1927.

The maternity and nursing homes in the City were inspected during the year. The standard of conduct generally was good, and the essential requirements, such as sufficient air space and efficient sanitation, a trained staff numerous enough to meet all reasonable needs, scrupulous cleanliness, good book-keeping, and suitable appliances for dealing with fire, were found without exception.

### CHILDREN.

**Births.**—There were 4,712 City children born alive in 1933, and of these 2,460 were boys and 2,252 girls—that is, there were 208 more boy babies than girls. As usual, death claimed more boys than girls—85 per 1,000 of the former, compared with 66 per 1,000 of the latter, dying during their first year.

21.1 per cent. of the City's births occurred in institutions, as shown in the following table :—

Nursing Homes .....	62
Maternity Hospital (inside) .....	626
Gables Maternity Home.....	114
Newcastle General Hospital.....	191
City Hospital for Infectious Diseases.....	1
	<hr/> 994
	<hr/>

**Illegitimate Births.**—215 illegitimate children were born—2 less than in the previous year. These died at the rate of 163 per 1,000 (compared with 72 per 1,000 legitimate births).

**Birth Rate.**—The birth rate for the year 1933 was 16.4 per 1,000 of the population. This is a decrease on the previous year, and the lowest on record.



**Deaths.**—There were fewer deaths in 1933 (359) than there were in the previous year (370).

As usual, the premature, multiple, and illegitimate births resulted in an excessive number of deaths, as will be seen from the following table :—

	1929	1930	1931	1932	1933
Deaths of children during first week of life	145	117	120	133	126
Deaths of children during first month.....	207	177	180	175	177
Deaths from prematurity.....	126	93	102	101	96
Deaths of twins and triplets .....	49	29	42	32	39
Death-rate of illegitimate children (per 1,000 illegitimate births).....	133	101	106	171	163

**The Pre-School Child.**—The children of pre-school age are receiving the closest and most careful consideration, and, as will be seen from the following table, parents are responding to our interest and are bringing the children in larger numbers to the Centres yearly. Nearly 50 per cent. of the total attendances at the Centres is made by children of pre-school age.

#### TODDLERS ATTENDING THE CENTRES.

<i>Year.</i>	<i>Number of Children.</i>
1928 .....	2,591
1929 .....	2,779
1930 .....	3,418
1931 .....	4,257
1932 .....	4,422
1933 .....	4,351

At most of the Centres these children are now seen every week at a special session devoted entirely to them, and a big step forward in dealing with them has been the dental treatment provided.

#### Play Centres.

The three play centres (or nursery schools, as they are usually termed) at Diana Street, Wharncliffe Street and St. Lawrence were open every week. Once again public recognition is made of the kindness and self-sacrifice of the ladies who voluntarily conduct these centres.



### **Municipal Training Course for Health Visitors.**

The third Training Course for Health Visitors commenced in October (1932) and ended with the examination in the College of Medicine in April. Of the 14 students enrolled eight qualified in April and three in July.

The fourth Training Course commenced with eight students in September. For economical and other reasons the numbers applying for training have decreased in all parts of the country.

### **Welfare Centres.**

The following table shows the geographical position of the Centres in the City, together with details of Centre days :—



Centre.	Address.	Women and Children.	Medical Officer.	Health Visitor.	Ante-Natal Sessions.
Benwell .....	Y.W.C.A. Club, Buddle Road	Monday..... Thursday .....	Dr. Olga Alcock .....	Miss Willson .....	Friday, 2 p.m. Mr. Harvey Evers.
Byker.....	Corner of Dalton Street and Shipley Street	Monday..... Tuesday.....	Dr. Anne Fairweather Dr. C. H. Armstrong	Miss Johnson ...	Friday, 2 p.m. Dr. Mabel Campbell.
City.....	Princess Mary Maternity Hospital, Jubilee Road	Tuesday .....	Dr. A. F. G. Spinks...	Miss Pritchard ...	Thursday, 2 p.m. Mr. Harvey Evers.
Fenham and Cowgate.....	Church Hall, Grange Road ...	Friday.....	Dr. Gertrude Hickling	Miss Worrall .....	Monday, 10 a.m. Mr. Harvey Evers.
Diana Street, Westgate.....	25, Diana Street.....	Tuesday..... Friday .....	Dr. Olga Alcock .....	Miss Hastie .....	Wednesday, 10 a.m. Mr. Harvey Evers.
Elswick .....	Elswick Wesleyan Church Hall, Malvern Street .....	Monday..... Thursday .....	Dr. Glen Davison.....	Miss Hatfield ...	Tuesday, 2 p.m. Mr. Harvey Evers.
Heaton .....	St. Gabriel's Parish Hall, Chillingham Road	Wednesday ...	Dr. A. F. G. Spinks...	Miss Lewis .....	(See Byker above).
Scotswood .....	Denton Road .....	Tuesday .....	Dr. Anne Fairweather	Miss Carr .....	Benwell (see above).
Shieldfield .....	St. Jude's Parish Hall, Dinsdale Road	Monday..... Thursday .....	Dr. A. F. G. Spinks..	Miss Mason .....	Byker (see above).
Spital Tongues .....	Dunn's Cottages .....	Tuesday (Afternoon only)	Dr. Mabel Campbell	Miss Simpson ...	Diana St. (see above). or Wharnccliffe Street (see below).
St. Lawrence.....	Harbottle Street .....	Wednesday ... Friday .....	Dr. Gertrude Hickling Dr. Glen Davison.....	Miss Hisco .....	Byker (see above).
Walker .....	Presbyterian Church Hall, Church Street	Monday..... Thursday .....	Dr. A. G. Ogilvie..... Dr. C. N. Armstrong	Miss Thompson	Tuesday, 10 a.m. Mr. Harvey Evers.
Walkergate .....	St. Oswald's Mission Room, Walpole Street, Walkergate	Thursday .....	Dr. Gertrude Hickling	Miss Phillips.....	Tuesday, 10 a.m. (see Walker above).
Wharnccliffe Street, Scotswood Road	18, Wharnccliffe Street .....	Wednesday ...	Dr. Mabel Campbell	Miss Shell.....	Tuesday, 10 a.m. Dr. Mabel Campbell.



MATERNITY AND CHILD WELFARE CENTRES, 1933.

CENTRE.	Ante-Natal Sessions.		Ante-Natal.		Post-Natal.		New Children.			Individuals.			Attendances.			Medical Sessions.		Illegitimate	Individ- uals.	
	Attend- ances.	Individ- uals.	Attend- ances.	Individ- uals.	Under 12 months	Over 12 months	Total.	Under 12 months	Over 12 months.	Total.	Under 12 months.	Over 12 months.	Total.	Number.	Average Attendce.	Boys.	Girls.			
Benwell.....	48	929	300	67	14	217	43	260	347	401	748	3757	4959	8716	188	46.4	13	361	387	
Byker .....	48	1725	448	20	4	316	52	368	463	400	863	3974	4467	8441	184	45.9	14	450	413	
City .....	...	...	...	...	...	178	20	198	254	248	502	2870	3275	6145	96	64.0	10	241	261	
Cowgate.....	45	449	132	11	7	208	42	250	298	275	573	3563	2167	5730	96	59.7	9	298	275	
Diana Street .....	49	869	300	2	1	270	55	325	396	495	891	4534	5289	9823	190	51.7	32	436	455	
Elswick.....	47	772	266	10	1	346	50	396	551	431	982	5989	3353	9342	188	49.7	25	481	501	
Heaton.....	...	...	...	...	...	179	30	209	251	186	437	2858	2042	4900	96	51.0	3	227	210	
Scotswood .....	...	...	...	...	...	101	17	118	146	220	366	1315	2123	3438	94	36.6	7	194	172	
Shieldfield .....	...	...	...	...	...	245	51	296	373	380	753	4590	5092	9682	188	51.5	25	352	401	
Spital Tongues.....	...	...	...	...	...	76	14	90	119	89	208	1218	935	2153	47	45.8	3	104	104	
St. Lawrence.....	...	...	...	...	...	355	53	408	518	470	988	5977	4287	10264	194	52.9	21	493	495	
Walker .....	47	505	224	1	1	235	20	255	351	345	696	3775	4716	8491	188	45.2	16	352	344	
Walkergate .....	...	...	...	...	...	122	26	148	203	193	396	2591	2049	4640	98	47.3	4	203	193	
Wharnclife Street .....	47	898	191	8	5	211	33	244	334	218	552	4105	3233	7338	98	74.9	22	286	266	
Total .....	331	6147	1861	119	33	3059	506	3565	4604	4351	8955	51116	47987	99103	1945	50.9	204	4478	4477	



## Attendances at Maternity and Child Welfare Centres.

(CHILDREN ONLY.)

YEAR.	No. of Attendances.	No. of Individuals.	Average Attendance per Individual.	Average Attendance at each Session.
1920 .....	22,596	3,751	6.0	44.2
1921 .....	32,538	4,734	6.8	40.7
1922 .....	36,020	4,835	7.4	44.9
1923 .....	42,515	5,153	8.2	46.5
1924 .....	45,766	5,587	8.2	45.5
1925 .....	45,476	5,744	7.9	43.6
1926 .....	50,697	6,467	7.8	46.2
1927 .....	46,672	6,522	7.1	42.4
1928 .....	53,960	6,532	8.3	49.3
1929 .....	52,460	6,574	7.9	48.2
1930 .....	67,626	7,776	8.7	44.2
1931 .....	83,561	8,927	9.4	43.1
1932 .....	100,658	9,251	10.9	51.5
1933 .....	99,103	8,955	11.1	50.9

### Dried Milk.

The following table shows the quantity of dried milk distributed each month during the year 1933 :—

MONTH.	FREE.	AT COST PRICE.
	lbs.	lbs.
January .....	5,381	2,757
February .....	5,411	1,632
March .....	6,831	1,833
April .....	5,563	1,952
May .....	5,095	3,117
June.....	5,851	1,972
July .....	5,238	2,222
August.....	4,615	2,253
September.....	6,032	1,736
October .....	4,805	2,650
November .....	4,915	1,956
December .....	7,083	2,685
	66,820	26,765

Children attending Centres .....	8,955
Children given free milk .....	2,907
Percentage .....	32.5
Expectant mothers given milk.....	393
Free milk given to children (lbs.).....	63,861
Free milk given to expectant mothers (lbs.).....	2,959

### CHILDREN ACTS, 1908-1933.

At the beginning of the year there were 36 nursed-out children in Newcastle, and 37 at the close of the year. All these



children were regularly supervised and kept under observation, and without exception the reports by our Supervisor concerning them were good.

### NOTIFICATION OF BIRTHS ACTS.

Of the 5,770 live, and 335 still-births (gross) which were registered in the City in 1933, 5,212 or 90.3 per cent. were notified as follows :—

<i>Notified by.</i>	<i>Gross Living Births.</i>	<i>Gross Still- Births.</i>
Medical Practitioners.....	295	13
Medical Practitioners and Midwives ...	345	10
Midwives .....	1,784	52
Maternity Hospital .....	2,063	202
Newcastle General Hospital.....	175	18
Gables Maternity Home .....	246	4
Parents.....	4	...
City Hospital for Infectious Diseases...	1	...
	<u>4,913</u>	<u>299</u>

**Still-Births.**—Of the total net notifications of births received, 180 were of still-births, which gives a rate of 36.8 per 1,000 of net live and still-births.

<i>Year.</i>	<i>Percentage.</i>	<i>Year.</i>	<i>Percentage.</i>
1928 .....	3.8	1931.....	4.2
1929 .....	3.7	1932.....	4.3
1930 .....	4.2	1933.....	3.5
Still-births Registered .....			180
Still-births Notified .....			142
Percentage Notified .....			79.0
Still-births Visited .....			165

<i>Duration of Pregnancy.</i>	<i>No.</i>	<i>Percentage to Total.</i>
At or under 7 months.....	32	19.5
At 7–8 months .....	38	23.0
At full time.....	95	57.5

Suggested causes of the still-births :—

	<i>Cases.</i>
(a) Ill-health of the mother.....	33
(b) Fœtal deformities and malpresentations and uterine inertia .....	50
(c) Premature delivery, ante-partum hæmorrhage, etc....	32
(d) Other causes, including albuminuria.....	50

**Syphilis** was returned as the cause of death of one child below the age of 1 year.

### WORK OF HEALTH VISITORS.

26 Health Visitors, including the Chief Health Visitor, were engaged solely in Maternity and Child Welfare work during 1933.



4,306 births were visited, and 24,924 re-visits were paid, an average of about 6 re-visits per child. These give a total of 29,230 visits to children under 1 year.

#### SUMMARY OF VISITS.

	Primary.	Subsequent.	Total.
Births .....	4,306	24,924	29,230
Measles .....	3,749	4,869	8,618
Pneumonia .....	685	1,014	1,699
Diarrhœa .....	35	100	135
Children over 1 Year.....	.....	.....	44,510
Hospital Cases .....	.....	.....	411
Expectant Mothers .....	.....	.....	1,766
Special Visits .....	.....	.....	694
Visits to Boarded-out or Nursed-out Children .....	.....	.....	503
Unsuccessful Visits (Outs and Removals).....	.....	.....	6,889
	.....	.....	94,455

The addresses of 231 children who left the City were sent to the Medical Officers of Health for the districts to which they had gone.

#### Infants on Visiting List.

Of 4,534 children born in the City in 1932, 3,767 completed their first year in 1933, and of the remainder :

318 died,  
225 left the City,  
191 could not be traced,  
33 were visited only once.

The following figures are therefore based on the 3,767 who completed the first year, *plus* the 318 who died, making in all a total of 4,085 and of that total 2,631 or 64.4 per cent., attended the Welfare Centres.

Of the number (2,631) attending the Centres 115 died, a rate of 43.7 per 1,000, as compared with 76 per 1,000 for the City.

*Illnesses.*—Among the children visited 307, or 7.5 per cent., contracted measles ; 141, or 3.5 per cent., contracted whooping cough ; 162, or 4 per cent., contracted diarrhœa ; 632, or 15.4 per cent., contracted bronchitis or pneumonia.

The mortality per 1,000 births in 1933 was as follows :—

1 roomed dwellings .....	91.9
2 roomed dwellings .....	79.9
3 roomed dwellings .....	62.6
Dwellings over 3 rooms.....	78.0



Details as to the stated **Feeding** of the 4,085 children under supervision during the year are given in the following table :—

	FEEDING.					
	BREAST.		MIXED.		ARTIFICIAL.	
	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.
At First Visit .....	3,699	90·5	113	2·8	273	6·7
Deaths in First Year of above Children .....	242	6·5	16	14·1	60	22·0
At time of Death.....	182	4·9	22	19·5	114	61·7
Surviving Children (3,767) at 9 months.....	1,987	52·7	437	11·6	1,343	35·7

Details as to children who should have attained the age of 5 years during 1933 :—

Well and attending school.....	2,898
Well and not attending school.....	38
Ill and not attending school.....	41
Left City or failed to trace.....	1,129
Died in 2nd year .....	97
Died in 3rd year .....	42
Died in 4th year .....	29
Died in 5th year .....	11
Total surviving .....	2,977
Total deaths .....	179
Total reported on.....	4,285

### Voluntary Workers.

As in other years the lady members of the Voluntary Association, under the presidency of Mrs. Leach, rendered valuable services, not only at the Centres, but also in the districts.

I am, Sir,

Your obedient servant,

A. F. G. SPINKS, M.D.,  
*Maternity and Child Welfare Medical Officer.*

*Health Department,  
 Town Hall,  
 Newcastle upon Tyne,  
 11th April, 1934.*



INCLUDING REPORTS OF THE  
RESIDENT MEDICAL OFFICER OF THE  
INFECTIOUS DISEASES HOSPITAL  
AND THE BACTERIOLOGIST.

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## III.—INFECTIOUS DISEASE.

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FEVERS, FOOD POISONING,  
CITY HOSPITALS FOR INFECTIOUS DISEASES,  
DISINFECTION, BACTERIOLOGY.







DEATHS (CORRECTED) FROM NOTIFIABLE INFECTIOUS DISEASES  
AND NON-NOTIFIABLE ZYMOTIC DISEASES, EXCLUSIVE OF TUBERCULOSIS.

WARD.	Diph- theria.	Ery- sipelas.	Scarlet Fever.	Enteric Fever.	Pneu- monia.	Cere- bro- Spinal Fever.	Enceph- alitis Lethar- gica.	Polioencepha- litis.	Polio- myelitis.	Measles and Rubella	Puer- peral Fever.	Small- pox.	Whoop- ing Cough.	Diarr- hoea (under 2 years of age).	Dysen- tery.	Tubercu- losis. All forms.
St. Nicholas'	...	...	...	...	1	...	...	...	...	1	...	...	...	1	...	5
St. Thomas'	1	...	...	...	3	2	...	...	...	1	...	...	...	1	...	8
St. John's	1	1	3	...	21	1	1	...	...	3	...	...	2	7	...	17
Stephenson	...	1	...	...	21	5	...	...	...	4	...	...	4	5	...	21
Armstrong	...	2	...	...	13	2	1	...	...	3	...	...	1	5	1	14
Elswick	...	1	...	...	8	1	...	...	...	1	...	...	2	4	...	14
Westgate	...	...	1	...	7	1	...	...	...	2	1	...	...	4	...	10
Arthur's Hill	...	...	...	...	4	...	...	...	...	...	...	...	...	1	...	11
Benwell	...	2	1	...	12	1	1	...	...	1	...	...	...	7	...	17
Fenham	...	...	...	...	13	1	1	...	1	...	2	...	...	...	...	25
All Saints'	...	1	1	...	9	5	...	...	...	6	...	...	2	...	...	20
St. Andrew's	...	...	2	1	10	...	...	...	...	2	...	...	1	3	...	15
Jesmond	...	...	...	1	3	...	...	...	...	...	...	...	...	2	...	5
Dene	1	...	1	...	8	2	...	...	...	1	...	...	1	2	...	11
Heaton	...	1	...	1	6	1	1	...	...	1	...	...	...	2	...	10
Byker	2	1	2	...	13	1	1	...	...	4	...	...	2	3	...	28
St. Lawrence	1	1	2	...	13	...	...	...	...	2	...	...	2	4	...	24
St. Anthony's	3	...	2	...	17	3	...	...	...	2	3	...	2	6	...	38
Walker	...	1	3	...	17	...	...	1	...	3	1	...	6	5	1	36
CITY	9	12	18	3	199	26	6	1	1	37	7	...	25	60	2	329

Note :—All deaths in Public Institutions have been allotted to the Wards to which they properly belong.



# NOTIFIED CASES OF INFECTIOUS DISEASE AND DEATHS (GROSS).

EXCLUSIVE OF TUBERCULOSIS.

AGES OF CASES OF INFECTIOUS DISEASE NOTIFIED AND DEATHS REGISTERED DURING THE YEAR 1933.

NOTIFIABLE DISEASE.	AT AGES—YEARS.												GROSS TOTAL.				NET TOTAL.		Cases admitted to Hospital (gross).				
	Under 1.		1 to 5		5 to 15.		15 to 25.		25 to 45.		45 to 65.		65 and up-wards.		Ages not known.		1933.			1932.		1933.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.		Cases.	Deaths.	Cases.	Deaths.
Diphtheria (including Membranous Group) .....	2	2	22	6	50	2	13	..	8	1	1	..	..	1	97	11	157	7	93	9	95		
Erysipelas .....	12	4	17	3	24	1	32	1	60	102	7	..	4	294	17	218	14	264	264	12	116		
Scarlet Fever.....	15	..	460	10	1363	6	141	4	75	..	1	..	5	2066	21	1195	7	2034	18	1934			
Enteric Fever .....	..	..	1	..	1	..	1	1	4	2	1	..	..	8	4	26	3	8	3	26	34		
Cerebro-Spinal Fever .....	8	8	18	13	11	7	9	7	4	5	2	1	..	52	41	59	33	51	51	26	73		
Acute Poliomyelitis.....	1	..	2	..	2	1	..	..	..	..	..	..	..	5	2	5	1	5	2	1	2		
Acute Polioencephalitis ..	..	..	..	..	2	1	..	..	..	..	1	..	..	3	2	3	2	2	2	1	..		
Encephalitis Lethargica ..	..	..	..	..	..	..	2	2	..	..	..	1	..	..	7	..	..	9	2	1	..		
Puerperal Fever .....	..	..	..	..	..	..	8	7	29	23	..	..	..	37	30	51	32	10	10	7	..		
Puerperal Pyrexia .....	..	..	..	..	..	..	20	..	31	..	..	..	..	51	..	144	..	26	26	..	4		
Ophthalmia Neonatorum...	56	..	..	..	..	..	..	..	..	..	..	..	..	56	..	57	..	52	52	..	4		
Pneumonia ..	71	56	247	58	154	14	79	8	113	33	91	47	3	815	250	889	283	764	199	154			
Malaria .....	..	..	..	..	..	..	2	..	6	..	2	1	..	10	1	9	..	10	1	..	..		
Dysentery .....	4	1	30	1	30	..	2	..	3	..	6	..	..	75	2	45	7	73	2	75			
† Measles and Rubella.....	268	7	2202	29	1585	1	21	..	7	1	1	..	1	4086	37	2394	20	4080	37	135			
‡ Chickenpox .....	43	..	256	..	558	..	20	..	1	..	..	..	1	888	..	1980	..	887	..	11			
	480	78	3255	120	3780	33	350	30	341	68	214	53	102	425	8545	7230	417	8361	322	2638			

\* Cases from outside the City excluded for the purpose of calculating NET Death Rates.

† Ministry of Health Regulations, 1920. ‡ Temporarily notifiable.

§ Includes one case which died outside the City.



## WARD DISTRIBUTION OF INFECTIOUS DISEASES (NET).

WARD.	Diphtheria.	Erysipelas.	Enteric Fever.	Scarlet Fever.	Cerebro-Spinal Fever.	Polio-myelitis.	Acute Polio-encephalitis.	Encephalitis Lethargica.	Measles.	Rubella.	Puerperal Fever.	Puerperal Pyrexia.	Ophthalmia Neonatorum.	Acute Primary Pneumonia.	Acute Influenzal Pneumonia.	Smallpox.	Chickenpox.	Malaria.	Dysentery.	Tuberculosis (all forms).	TOTAL.	
St. Nicholas' .....	1	2	...	4	...	...	...	...	33	...	...	...	...	2	...	...	14	...	...	1	7	64
*St. Thomas' .....	6	8	...	55	1	...	...	...	137	2	...	...	1	13	5	...	27	2	1	1	20	278
St. John's .....	...	12	...	142	6	...	...	1	381	3	...	2	5	54	8	...	44	1	...	...	32	691
Stephenson.....	5	12	...	103	4	1	...	1	233	1	...	2	1	45	5	...	127	1	6	41	41	588
Armstrong .....	21	24	1	72	3	...	...	...	174	2	...	3	2	30	10	...	84	...	18	29	29	473
Elswick .....	2	7	1	58	2	...	...	...	170	4	...	...	1	25	7	...	36	...	...	1	30	344
Westgate .....	10	14	...	113	1	1	...	...	227	1	1	1	1	32	10	...	20	...	3	31	31	466
†Arthur's Hill.....	1	19	...	37	1	...	...	...	54	2	1	...	...	10	6	...	21	1	3	16	16	172
Benwell.....	4	26	...	202	4	...	...	...	251	8	...	2	...	42	14	...	125	...	7	37	37	722
Fenham .....	6	18	...	181	3	1	1	...	340	8	2	3	...	40	16	...	60	2	...	...	39	720
All Saints'.....	4	17	...	110	7	1	...	...	375	12	2	5	14	47	3	...	42	1	...	2	38	680
St. Andrew's.....	6	7	1	72	2	...	...	...	113	4	...	2	1	22	3	...	16	...	...	...	17	266
Jesmond .....	3	3	2	31	...	...	...	...	65	1	...	1	...	11	4	...	14	...	1	...	8	144
Dene .....	7	12	...	108	3	...	...	...	227	11	...	...	2	23	6	...	14	...	...	...	25	438
Heaton .....	1	17	1	92	1	...	...	...	142	4	...	...	5	16	2	...	47	...	5	19	19	352
Byker .....	7	14	...	114	3	...	...	...	188	9	...	1	3	29	1	...	42	...	2	45	45	458
St. Lawrence.....	1	15	1	118	3	...	...	...	177	20	...	...	5	34	3	...	40	...	2	47	47	466
St. Anthony's .....	5	13	...	223	3	...	...	...	254	4	2	...	5	68	6	...	44	...	7	71	71	705
†Walker.....	3	24	1	199	4	1	1	...	441	2	2	4	6	105	7	...	70	2	14	67	67	953
CITY .....	93	264	§8	2034	51	5	2	2	3982	98	10	26	52	648	116	...	887	10	73	619	...	8980

\* Includes Royal Victoria Infirmary and Fleming Memorial Hospital for Sick Children.

† Elswick Grange and Newcastle General Hospital.

‡ City Hospital for Infectious Diseases, Walker Gate.

§ One case which died outside of the City.



# HOUSEHOLDS AFFECTED WITH INFECTIOUS DISEASES, EXCLUSIVE OF TUBERCULOSIS, MEASLES AND CHICKENPOX.

DISEASES.	HOUSEHOLDS WITH						Mili- tary or Naval Cases.	Insti- tutions. *	TOTAL CASES (Gross).	Cases from outside of City.	NET CASES.
	Single Cases.	2 Cases each.	3 Cases each.	4 Cases each.	5 Cases each.	6 Cases and over.					
Diphtheria (including Mem- branous Croup).....	79	3	2	...	...	...	...	6	97	4	93
Erysipelas .....	231	4	...	...	...	...	...	55	294	30	264
Scarlet Fever.....	1,450	183	36	7	5	2	...	77	2,066	32	2,034
Enteric (or Typhoid Fever).....	6	...	...	...	...	...	...	†2	†8	...	†8
Cerebro-Spinal Fever .....	46	...	...	...	...	...	...	6	52	1	51
Poliomyelitis .....	5	...	...	...	...	...	...	...	5	...	5
Encephalitis Lethargica .....	2	...	...	...	...	...	...	...	2	...	2
Polioencephalitis .....	2	...	...	...	...	...	...	1	3	1	2
Puerperal Fever.....	9	...	...	...	...	...	...	28	37	27	10
Puerperal Pyrexia .....	22	...	...	...	...	...	...	29	51	25	26
Ophthalmia Neonatorum.....	42	...	...	...	...	...	...	14	56	4	52
Pneumonia.....	704	28	...	...	...	...	2	53	815	51	764
Malaria .....	2	...	...	...	...	...	...	8	10	...	10
Dysentery .....	42	3	1	1	...	...	...	20	75	2	73
TOTAL .....	2,642	221	39	8	5	2	2	299	3,571	177	3,394

\* See next page.

† Includes one case which died outside of the City.



## INFECTIOUS DISEASES.

**Schools and Infectious Disease.**—It was not found necessary to close any school on account of infectious disease during the year.

## PUBLIC INSTITUTIONS AND INFECTIOUS DISEASE.

The following notifications were received during the year :—

INSTITUTIONS, &c.	Diphtheria.	Erysipelas.	Scarlet Fever.	Enteric Fever.	Encephalitis Lethargica.	Measles and Rubella.	Puerperal Fever.	Puerperal Pyrexia.	Pneumonia.	Chickempox.	Ophthalmia Neonatorum.	Polio- myelitis.	Polio- encephalitis.	Cerebro-Spinal Fever.	Smallpox.	Malaria.	Dysentery.	TOTAL.
Royal Victoria Infirmary .....	2	25	17	..	..	4	1	..	53	..	..	..	1	1	..	2	..	106
Fleming Memorial Hospital .....	1	4	18	..	..	3	..	..	1	..	..	..	..	2	..	..	3	32
Newcastle General Hospital.....	..	14	10	..	..	15	..	..	1	..	..	..	..	2	..	1	7	50
City Hospital for Infectious Diseases .....	..	..	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	3
Maternity Hospital.....	1	..	..	..	..	..	25	26	..	..	..	..	..	..	..	..	..	52
Military Barracks .....	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Barnado's Home.....	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	5	..	6
City Mental Hospital.....	..	..	..	†1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
St. Joseph's Home.....	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Eye Infirmary.....	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5
Nursing Homes.....	..	..	2	..	..	..	1	2	..	..	..	..	..	..	..	..	..	2
National Children's Home.....	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21
Throat, Nose and Ear Hospital...	1	8	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Common Lodging Houses.....	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	7
Nazareth House.....	..	..	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Royal Victoria School for the Blind .....	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	7
Babies' Hospital, West Parade...	1	3	1	..	..	1	..	..	..	..	..	..	..	1	..	..	..	1
Home for Incurables.....	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Elswick Lodge.....	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	2
Salvation Army Maternity Home	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	10	13
St. Vincent's Home.....	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	2
Northern Counties Orphanage (Boys).....	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
TOTAL .....	6	55	77	2	34	27	29	55	..	..	..	1	6	8	20	320		

\* Does not include any cases belonging to the City which could properly be assigned to their homes. † Inward transfer of death.



### SCARLET FEVER.

Notifications of 2,034 cases were received during the year, and there were 18 deaths, equivalent to a mortality of 0.9 per cent.

### DIPHTHERIA.

93 cases were notified during the year, and 9 died, a case mortality of 9.7 per cent., as compared with 3.7 in 1932.

### MEASLES AND RUBELLA.

4,080 cases (including 98 of rubella) were notified, and there were 37 deaths (net) in 1933, representing a death rate of 0.13 per 1,000 population, as compared with 0.07 in 1932, and a case mortality of 0.9 per cent. of notified cases (net).

The following table shows the deaths in the various wards, and at different age periods :—

WARD.	Under 3 months.	3 and under 6 months.	6 and under 9 months.	9 and under 12 months.	1 and under 2 years.	2 and under 3 years.	3 and under 4 years.	4 and under 5 years.	5 and under 10 years.	Over 10 years.	TOTALS.
St. Nicholas'.....	...	...	...	...	...	...	1	...	...	...	1
St. Thomas'.....	...	...	...	...	1	...	...	...	...	...	1
St. John's .....	...	...	...	...	1	1	1	...	...	...	3
Stephenson .....	...	...	...	1	2	...	1	...	...	...	4
Armstrong .....	...	...	...	...	2	1	...	...	...	...	3
Elswick .....	...	...	...	...	...	...	...	1	...	...	1
Westgate .....	...	...	...	...	...	1	...	...	1	...	2
Arthur's Hill .....	...	...	...	...	...	...	...	...	...	...	...
Benwell.....	...	...	...	...	1	...	...	...	...	...	1
Fenham .....	...	...	...	...	...	...	...	...	...	...	...
All Saints'.....	...	...	...	2	4	...	...	...	...	...	6
St. Andrew's .....	...	...	...	...	...	2	...	...	...	...	2
Jesmond .....	...	...	...	...	...	...	...	...	...	...	...
Dene .....	...	1	...	...	...	...	...	...	...	...	1
Heaton .....	...	...	...	...	1	...	...	...	...	...	1
Byker .....	...	...	...	1	1	...	1	1	...	...	4
St. Lawrence .....	...	...	...	1	...	...	1	...	...	...	2
St. Anthony's .....	...	...	...	...	1	...	1	...	...	...	2
Walker.....	1	...	...	...	1	1	...	...	...	...	3
TOTAL .....	1	1	...	5	15	6	6	2	1	...	37

Each Health Visitor visited and revisited selected cases occurring in her district. By this arrangement each case is seen immediately on receipt of the notification, and advice is given regarding the nursing and isolation of the patient. The cases are kept under supervision until they recover, and should subsequent cases occur in the family they are recorded.



### Measles Cases, including Rubella, notified during 1933.

Cases notified by Medical Practitioners.....	3,203
Cases found by Health Visitors .....	854
Cases notified by Parents.....	26
Cases found from Returns of Deaths.....	3
	<hr/>
	4,086 gross.
	4,080 net.
	<hr/>

Of the total number of measles cases notified, 3,749 in 2,868 households (or 91.8 per cent.) were visited by the Health Visitors, and 4,869 revisits were paid, a total of 8,618 visits.

The following particulars refer to the cases visited :—

	DWELLINGS OF					Total houses visited.
	1 room.	2 rooms.	3 rooms.	4 rooms.	More than 4 rooms.	
Families .....	338	1,063	725	612	130	2,868
Children .....	837	2,874	1,783	1,603	343	7,440
Cases .....	464	1,391	936	791	167	3,749
Percentage of Cases to						
Children .....	55.4	48.4	52.5	49.3	48.7	50.4
Cases developing Pneumonia	24	56	35	14	1	130
Percentage of Cases develop-						
ing Pneumonia .....	5.2	4.0	3.7	1.8	0.6	3.5
Deaths from Measles.....	10	15	7	3	...	35
Cases notified Measles, Deaths						
certified Pneumonia.....	2	5	2	...	...	9
Case Mortality per cent.....	2.6	1.4	1.0	...	...	1.2

Total unvisited cases 337, including 303 in better-class houses, in which no deaths occurred, and 34 in institutions, with 2 deaths.

*Medical Attendance.*—In 95.4 per cent. of the cases visited a doctor was in attendance.

*Condition of Patient.*—In 86.3 per cent. of the cases visited the disease ran a normal course, but bronchitis, pneumonia or other complications developed in the remainder.

*Attendance at Schools.*—1,304, or 34.8 per cent of the affected children had previously attended school, and 2,445, or 65.2 per cent. had never attended school. In connection with 1,374 of the latter cases, however, other children in the infected houses were scholars, equivalent to 36.6 per cent. of the total cases.



The following were the ages of visited children who were suffering from measles :—

Under 1 year .....	260
1-2 years .....	530
2-3 years .....	531
3-4 years .....	521
4-5 years .....	549
5-6 years .....	727
Over 6 years .....	631
	<hr/>
	3,749
	<hr/>

WHOOPING COUGH.

25 deaths occurred from whooping cough. The particulars are as follows :—

WARD.	YEARS OF AGE.						Total.
	0-1.	1-2.	2-3.	3-4.	4-5.	5-10.	
St. Nicholas' .....	...	...	...	...	...	...	...
St. Thomas' .....	...	...	...	...	...	...	...
St. John's .....	1	1	...	...	...	...	2
Stephenson.....	*2	2	...	...	...	...	4
Armstrong.....	...	1	...	...	...	...	1
Elswick.....	...	2	...	...	...	...	2
Westgate .....	...	...	...	...	...	...	...
Arthur's Hill .....	...	...	...	...	...	...	...
Benwell .....	...	...	...	...	...	...	...
Fenham .....	...	...	...	...	...	...	...
All Saints' .....	1	1	...	...	...	...	2
St. Andrew's .....	...	...	...	1	...	...	1
Jesmond .....	...	...	...	...	...	...	...
Dene .....	1	...	...	...	...	...	1
Heaton .....	...	...	...	...	...	...	...
Byker.....	...	1	1	...	...	...	2
St. Lawrence .....	2	...	...	...	...	...	2
St. Anthony's .....	2	...	...	...	...	...	2
Walker .....	2	2	1	...	...	1	6
CITY .....	11	10	2	1	...	1	25

\*One an inward transfer.

The death rate in 1933 was equivalent to 0.09 per 1,000 population, as compared with 0.11 in 1932.

FOOD POISONING.

There were two cases of food poisoning reported during the year, one of which proved fatal.



## ENTERIC GROUP OF FEVERS.

During the year 1933, 13 cases of the enteric group of infections were brought to notice. The distribution of these cases, according to the months in which they were notified, the type of infection (typhoid or para-typhoid), and their place of origin, is recorded in the following table :—

**Distribution of Enteric Group Infections for 1933.**

	EXTRA-MURAL.		NEWCASTLE.	
	Typhoid.	Para-typhoid B.	Typhoid.	Para-typhoid B.
January .....	...	...	...	...
February.....	...	...	1	...
March .....	...	...	...	...
April.....	...	...	...	1
May .....	...	...	...	...
June.....	...	1	1 (1)	...
July.....	...	1	...	...
August.....	...	1	...	1
September .....	1	...	1	1 (1)
October .....	2 (1)	...	...	...
November.....	...	...	...	...
December .....	...	...	1	...
Totals .....	3 (1)	3	4 (1)	3 (1)

The figures in parentheses, which are included in the numbers alongside which they stand, indicate fatal cases.

It will be seen that 6 of the 13 patients came from without the City's boundaries, the remaining 7 being Newcastle cases proper. Of the 6 extra-mural cases (3 typhoid and 3 para-typhoid) 3 were admitted to the City Hospital at the request of the Local Authorities concerned, and two were admitted to the hospitals of their own Local Authorities. The remaining case died in an Institution in the City, and was diagnosed post-mortem. The 7 City cases were made up of four cases of typhoid, two of which were not bacteriologically proved, and three para-typhoid B. infections. These were all sporadic cases, and no connection could be traced between them.

In all, there were 34 admissions to the City Hospital. Apart from the ten patients mentioned above, these cases were all notified in the areas of neighbouring Local Authorities, and were



admitted to the City Hospital at the request of the Local Authority concerned, either because they had no Infectious Diseases Hospital of their own, or because their available accommodation was already fully occupied. Of the 14 patients who were regarded as suffering from typhoid fever, two died—equivalent to a case mortality rate of 14.3 per cent. Amongst the 20 para-typhoid cases there was one death—equivalent to a mortality rate of 5.0 per cent.

### DIARRHŒA.

There were in all 81 deaths from the disease, equal to a death rate of 0.28 per 1,000 population, and this number included 60 deaths of children under two years of age.

### SMALLPOX.

No case of this disease occurred in the City during the year.

The following are the particulars of **Vaccination** during the last twenty-nine years :—

Year.	Births Registered.	Successful Vaccinations.	Unsuccessful Vaccinations.	Exemption Certificates.		Deaths, Removals and Post-ponements.
				Number.	Percentage to Total Births.	
1905	7,958	7,264	27	65	0.8	...
1906	7,721	6,733	28	92	1.2	...
1907	7,610	6,702	16	94	1.2	...
*1908-12	35,265	27,240	114	3,398	9.6	...
1913-17	34,296	21,251	33	7,144	20.8	...
1918-22	34,372	19,011	95	9,262	26.9	...
1923-27	31,290	19,658	30	5,542	17.7	...
1928	5,780	4,320	19	912	15.8	...
1929	5,638	3,555	33	1,092	19.4	...
†1930	†6,195	3,897	31	1,264	20.4	1,003
1931	6,059	3,754	39	1,343	22.2	923
1932	6,009	3,600	27	1,395	23.2	889
§1933	5,770	2,986	13	1,320	22.9	...

\* Vaccination Act, 1907, came into force.

† Walker District included.

‡ Supervision of Vaccination transferred from Guardians to Health Committee on 1st April, 1930.

§ Provisional figures only.



**CHICKENPOX.**

887 cases were notified. There were no deaths.

**ERYSIPELAS.**

264 cases of this disease were notified and there were 12 deaths.

**PUERPERAL SEPTICÆMIA AND PUERPERAL PYREXIA.**

36 cases were notified, with 7 deaths. Inquiries were made concerning 34 of these.

**INFLUENZA AND PNEUMONIA.**

These diseases accounted for 352 deaths as against 310 last year.

Total deaths at age periods.

Under 5 years.	5-15.	15-25.	25-45.	45-65.	65 and over.	Total.
96	16	11	50	80	99	352

As will be seen from the above figures, 96, or 27 per cent., of the deaths occurred below the age of 5 years.

764 cases of pneumonia, including influenzal-pneumonia, were notified, For the ages and ward distribution, see pages 74 and 75.

Of that number 685, or 89.7 per cent., were visited by Health Visitors. It was found that of these 685 visited cases, 384, or 56.1 per cent., were primary pneumonia, 166, or 24.2 per cent., were cases of influenzal-pneumonia, and 135, or 19.7 per cent., were cases of pneumonia following other diseases.

*Sex.*—54.9 per cent. of the cases were males.



*Ages.*—The ages of the 685 cases visited were as follows :—

Under 1 year.....	69
1-5 years .....	232
5-15 years .....	135
15-25 years .....	58
25-45 years .....	89
45-65 years .....	66
and over 65 years .....	36
	<hr/>
	685
	<hr/>

*Housing.*—93 cases occurred in 1 roomed dwellings, 248 cases occurred in 2 roomed dwellings, 166 cases occurred in 3 roomed dwellings, and 178 cases occurred in more than 3 roomed dwellings.

*Type of House.*—300 cases occurred in flats, 246 cases in tenements, and 139 in self-contained houses.

*Previous History.*—

There was a previous history of Measles	in 355 cases.
„ „ „ Whooping Cough	in 232 cases.
„ „ „ Influenza	in 203 cases.
„ „ „ Frequent winter Coughs and Colds	in 723 cases.
„ „ „ Pneumonia	in 194 cases.
„ „ „ Tuberculosis	in 17 cases.

*Hospital Treatment.*—154 cases of pneumonia were treated in the Infectious Diseases Hospital. The majority of these were from houses where there was over-crowding or other unsuitable home conditions. 34 of these patients died, giving a case mortality of 22.1 per cent.

*Deaths.*—115, or 16.8 per cent. of the visited cases of pneumonia died.

## VENEREAL DISEASES.

Syphilis was certified as the cause of death in 11 cases.

The work of the treatment clinic has been continued successfully. 1,461 old and new cases attended 21,097 times as out-patients. 14 cases accounted for 254 in-patient days. Of the 799 new cases, 218 were syphilis, 397 gonorrhœa, 12 soft chancre, and 172 were conditions other than venereal. 70 per cent. were males.



2,649 doses of salvarsan substitutes, 3,673 doses of mercury and 935 doses of bisoxyl were administered to out-patients and in-patients.

2,576 Wasserman reactions were carried out by the College of Medicine, and 105 microscopical examinations of pathological material were made by the College and 1,256 at the treatment clinic. The irrigation stations for males and for females in connection with the clinic have been in full use during the year.

54 medical practitioners in the City are qualified to receive free supplies of arseno-benzol compounds. 21 made application for these supplies during the year and 885 doses were given.

#### **Newcastle Residents Notified as Attending other Centres.**

**Cases.**—Syphilis, 5 ; gonorrhœa, 19 ; conditions other than venereal, 3.

**Attendances.**—285.

Doses of salvarsan substitute given to in-patients and out-patients, 10.

**In-patients.**—In-patient days, 146.

Information as to ophthalmia neonatorum will be found in Section II. (The Child).

### **ENCEPHALITIS LETHARGICA.**

During the year 1933 there were two cases of encephalitis lethargica notified, and one of these cases died. There were 7 other deaths.

All of these referred to patients in the post-encephalitic state of the disease. Each case was investigated and the approximate dates of the original attacks in this series were found to be as follows :—one in 1914 ; two in 1924 ; two in 1925 ; one in 1928 ; and one in 1930.

During 1933 one proved case of encephalitis lethargica was admitted to the City Hospital from an extra-mural area, and proved fatal.



### ACUTE POLIOMYELITIS.

Five cases were notified, two of which died. Two cases were admitted to the City Hospital, one from outside of the City. The latter case proved fatal.

### CEREBRO-SPINAL MENINGITIS.

During the past few years there has been a steadily increasing incidence of cerebro-spinal fever, and during 1933 51 cases were notified in Newcastle, 46 of which were removed to the City Hospital for treatment. This number is slightly lower than that recorded in 1932, but is higher than the figures for 1931 and 1930. In addition, 27 cases were admitted from surrounding areas, so that in all, 73 patients have been treated in the City Hospital. There were 31 deaths amongst these 73 cases, equivalent to a case mortality rate of 42.5 per cent. This figure is also higher than that for 1932, which was 37.2 per cent. It may be noted that if the cases dying within 24 hours of admission, which numbered eight, were to be deducted, a case mortality rate of 31.5 would be obtained. The distribution of the cases according to the months in which they were notified, and their places of origin, is recorded in the following table :—

	Newcastle.	Extra-Mural.	Totals.
January .....	9 (4)	...	9 (4)
February .....	3	2 (2)	5 (2)
March .....	8 (4)	4 (1)	12 (5)
April.....	3 (3)	1	4 (3)
May .....	7 (4)	1	8 (4)
June .....	2	2 (1)	4 (1)
July.....	1	...	1
August .....	3 (2)	2 (1)	5 (3)
September .....	3 (2)	4 (1)	7 (3)
October .....	...	2 (1)	2 (1)
November.....	2	8 (3)	10 (3)
December .....	5 (2)	1	6 (2)
Totals .....	46 (21)	27 (10)	73 (31)

The figures in parentheses, which are included in the numbers alongside which they stand, indicate fatal cases.



The circumstances of all the Newcastle cases have been carefully investigated, but in no case has it been possible to trace the source of the infection.

No fewer than 27 cases of cerebro-spinal fever were admitted to hospital from extra-mural authorities in the neighbourhood, and wherever possible, it has been the policy of the Health Department to give assistance to authorities whose hospital accommodation is of such a character as to prevent them from giving adequate treatment to patients suffering from this extremely dangerous disease. The following table shows the age and sex distribution of the 73 cases admitted to hospital :—

Ages.	0-1.	1-2.	2-5.	5-15.	15-25.	25-45.	45 and up-wards.	Totals.
Male .....	5 (3)	4 (1)	5 (2)	9 (5)	16 (5)	9 (3)	...	48 (19)
Female.....	1 (1)	7 (4)	7 (5)	4	4 (1)	1	1 (1)	25 (12)
Totals .....	6 (4)	11 (5)	12 (7)	13 (5)	20 (6)	10 (3)	1 (1)	73 (31)

Figures in parentheses indicate deaths.

It will be noted that the attack rate and mortality rate are particularly high under the age of 5, and that young persons and adults from 15 to 45 have the best chance of recovery from the disease.

### BACILLARY DYSENTERY.

Bacillary dysentery has been prevalent in the City since 1928, and during the past year 139 cases were notified. In only 80 of these, however, was the diagnosis confirmed bacteriologically. Of the latter number, 2 were extra-mural cases, who were admitted to one of the City's hospitals suffering from the disease.

Two persons died from the disease, both of whom were Newcastle inhabitants. The majority of patients were isolated in institutions, and of the 80 proved cases 75 were admitted to the City Hospital, Walker Gate, where four died.



During the year eleven cases were notified in the Newcastle General Hospital. Three of these occurred together, but two were infected with the Flexner type of organism, while the other was due to the Sonne organism. The remainder were sporadic cases, and it cannot be said that there was any definite outbreak during the year.

There was a small outbreak in the Fleming Memorial Hospital during the autumn, four cases being affected including the two extra-mural cases mentioned above. The Flexner type was the causal organism. Six cases in all were notified from the Hospital during the year.

Ten cases were notified in a Boys' Home, in which the Flexner organism was again the infecting agent. The cases occurred in groups of two and three each month during the spring, but in spite of a careful search for a carrier it was not found possible to detect the source of infection.

The circumstances and history of all cases were carefully investigated with a view to obtaining information as to the probable sources of infection. The age, sex, and mortality incidence of the series of 80 cases are given in the following table :—

Ages.	0-1.	1-2.	2-5.	5-15.	15-25.	25-45.	45 and up-wards.	Total.
Males.....	...	7	15 (1)	22	...	1	4 (1)	49
Females .....	4 (1)	3	7	11	1	3 (1)	2	31
Total .....	4 (1)	10	22 (1)	33	1	4 (1)	6 (1)	80 (4)

The figures in parentheses indicate fatal cases.

The distribution of these organisms among the cases is as follows :—

	FLEXNER.							Sonne Bacillus.	N/c	Not Types	Totals.
	V.	W.	X.	Y.	Z.	XZ.	Atypical.				
Total No. of Cases	...	13	4	...	22	22	1	15	1	2	80
Fatal Cases.....	...	...	1	...	...	...	...	1	...	2	4
Non-Fatal Cases	...	13	3	...	22	22	1	14	...	...	76



## CITY HOSPITALS FOR INFECTIOUS DISEASES.

## Report of the Resident Medical Officer.

## Accommodation.

NAMES AND SITUATION OF HOSPITALS.	TOTAL AVAILABLE BEDS.
City Hospital for Infectious Diseases, Walker Gate—	
Fever Pavilions..... Beds. 232	
(One of 30 beds temporarily appropriated for Tuberculosis)	
Tuberculosis Pavilions ..... 106	
	338
Smallpox and Isolation Hospitals, Town Moor .....	172

## City Hospital, Walker Gate.

YEAR.	Population of the City.	Number of Beds at Hospital for Fever Cases.	Total Admissions (exclusive of Pulmonary Tuberculosis and Smallpox).	Percentage of Scarlet Fever, Diphtheria and Enteric Fever Cases Admitted to Cases Notified.
1890	182,866	104	219	21·3
1900	213,039	104	290	38·6
1909	263,064	172	1,090	78·0
1910	265,077	172	912	83·0
1911	267,261	172	1,110	83·1
1912	269,193	172	1,542	86·4
1913	271,295	172	1,286	88·3
1914	271,523	172	1,835	78·9
1915	278,107	232	1,886	90·5
1916	278,107	232	1,380	87·0
1917	278,107	232	1,303	87·5
1918	278,107	232	1,245	87·5
1919	275,099	232	1,370	84·3
1920	286,061	232	1,710	86·4
1921	278,400	232	1,683	82·4
1922	281,600	232	1,032	86·3
1923	283,800	232	991	92·6
1924	285,900	232	1,502	90·5
1925	286,300	*232	1,711	86·4
1926	284,700	*232	1,397	89·1
1927	288,500	*232	1,493	89·7
1928	281,500	*232	1,294	92·9
1929	283,400	*232	1,713	89·1
1930	283,400	*232	1,649	96·4
1931	283,600	*232	2,347	95·6
1932	285,100	*232	2,143	96·4
1933	286,500	*232	3,040	96·3

\* 30 of these beds temporarily appropriated for Tuberculosis patients.



# CITY HOSPITAL, WALKER GATE.

(Fever Pavilions).

Admissions during the year—3,040.

The *average daily number* of patients in the hospital was 230, exclusive of 120 cases of Phthisis.

RATE PER CENT. OF CASES REMOVED TO HOSPITAL TO CASES NOTIFIED.

	1890	1895	1900	1905	1910	1915	1920	1925	1930	1931	1932	1933
Scarlet Fever .....	18.4	33.0	35.0	50.1	84.5	91.3	85.7	85.0	95.9	95.2	96.3	96.1
Diphtheria .....	8.3	28.7	40.0	36.8	80.1	89.1	89.1	94.1	97.5	99.1	96.3	100.0
Enteric Fever.....	38.9	48.0	54.5	52.0	90.5	87.0	90.0	96.4	97.6	92.3	100.0	100.0
All cases of the above, together with Con- tinued and Typhus Fever and Cerebro- Spinal Fever, etc.	21.3	34.6	38.6	47.8	83.0	90.5	86.4	86.0	96.1	95.6	96.3	96.0



**CITY HOSPITAL FOR INFECTIOUS DISEASES,  
WALKER GATE.**

90A

**Diseases Admitted—1933.**

		PROVED TO BE:—																											
SENT IN AS	Number.	Scarlet Fever.	Diphtheria.	Diphtheria Carriers.	Enteric Group Fevers.	Dysentery.	Measles.	Rubella.	Varicella.	Mumps.	Anthrax.	Pertussis.	Epidemic Cerebro-Spinal Meningitis.	Other forms of Meningitis.	Poliomyelitis.	Encephalitis Lethargica.	Pneumonia.	Bronchitis.	Influenza.	Other Respiratory Diseases.	Erysipelas.	Skin and Septic Conditions.	Puerperal Pyrexia.	Tonsilitis.	Other Gastro-intestinal Diseases.	Ophthalmia Neonatorum.	General Diseases.	Injuries.	Unclassified.
Scarlet Fever .....	2015	1918	6	...	...	...	5	8	2	...	...	...	...	...	...	...	3	...	3	1	...	19	...	41	...	...	...	...	9
Diphtheria .....	168	9	86	6	...	...	...	...	...	...	...	1	...	...	...	...	4	...	...	3	...	...	...	55	...	...	...	...	4
Diphtheria Carriers.....	17	...	3	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Enteric Group Fevers.....	54	1	...	...	33	...	...	...	...	...	...	...	...	1	...	...	4	...	2	...	...	1	...	...	3	...	2	...	7
Dysentery.....	116	...	...	...	...	73	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	42	...	1	...	...
Measles .....	125	1	...	...	...	...	115	...	...	...	...	...	...	...	...	...	2	...	...	...	...	5	...	...	...	...	1	...	...
Rubella.....	2	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...
Varicella .....	9	...	...	...	...	...	...	...	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mumps .....	8	...	...	...	...	...	...	...	...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anthrax.....	3	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Pertussis .....	13	...	...	...	...	...	...	...	...	...	...	8	...	...	...	...	4	...	...	1	...	...	...	...	...	...	...	...	...
Epidemic Cerebro-Spinal Meningitis.....	60	...	...	...	...	...	...	...	...	...	...	...	53	1	...	1	1	...	1	...	...	...	...	...	...	...	...	...	2
Other forms of Meningitis	41	1	...	...	1	...	...	...	...	...	...	...	18	8	...	...	4	1	...	...	...	...	...	...	2	...	1	...	6
Poliomyelitis.....	4	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Encephalitis Lethargica...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Pneumonia .....	157	2	...	...	...	...	5	1	...	...	...	1	2	...	...	...	132	...	...	2	...	...	...	...	...	...	1	...	...
Bronchitis.....	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	...	...	...	...	...	...	...	...	...	...	1
Influenza .....	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	23	...	...	...	...	...	...	...	...	...	...
Other Respiratory Diseases .....	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...
Erysipelas.....	129	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	116	9	...	...	...	...	...	...	3
Skin and Septic Conditions	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23	...	...	...	...	...	...	...
Puerperal Pyrexia .....	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...
Tonsilitis .....	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23	...	...	...	...	...
Other Gastro-Intestinal Diseases .....	9	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	...	...	1
Ophthalmia Neonatorum..	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...
Injuries .....	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...
Unclassified .....	21	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	20
TOTALS.....	3040	1934	95	19	34	75	125	10	11	8	2	10	73	11	2	1	154	15	30	12	116	58	4	119	54	4	6	3	55







### Diseases and Mortality Rates.

MORTALITY OF CASES TREATED IN HOSPITAL AS COMPARED WITH CASES  
NOT REMOVED DURING 1933.

DISEASE.	HOSPITAL.			NOT REMOVED.		
	Total Cases. (Verified)	Deaths.	Case Mortality per cent.	Total Cases.	Deaths.	Case Mortality per cent.
Scarlet Fever...	1,934	27	1·39	79	...	...
Diphtheria.....	114	10	8·7	*	...	...
Enteric Group of Fevers	34	4	11·7	...	...	...

\*One case, from outside of the City, died in the Royal Victoria Infirmary.

### Present Death Rates compared with those of Previous Years.

RETURN SHOWING THE NUMBER OF CASES OF  
SCARLET FEVER, DIPHTHERIA AND ENTERIC FEVER ADMITTED TO HOSPITAL  
AND MORTALITY RATES PER CENT.  
1891-1900.

YEARS.	NUMBER OF CASES ADMITTED TO HOSPITAL.			NUMBER OF DEATHS.			CASE MORTALITY PER CENT.		
	Scarlet Fever.	Diph- theria.	Enteric Fever.	Scarlet Fever.	Diph- theria.	Enteric Fever.	Scarlet Fever.	Diph- theria.	Enteric Fever.
1891-1895 ...	1,105	92	277	34	26	51	3·1	28·3	18·4
1896-1900 ...	1,087	103	442	41	21	86	3·8	20·6	19·5
1915-1929.									
1915-1919 ...	3,402	998	194	99	89	21	2·9	9·0	10·8
1920-1924 ...	3,919	1,037	78	37	73	9	0·9	7·5	11·6
1925-1929 ...	3,612	908	123	43	62	23	1·2	6·8	18·7
1930-1933.									
1930.....	584	158	66	4	4	2	0·69	2·5	3·0
1931.....	989	94	21	5	5	2	0·5	5·3	9·5
1932.....	1,120	162	33	9	5	4	0·8	3·1	12·1
1933.....	1,934	114	34	27	10	4	1·39	8·7	11·7



Admissions and Deaths, 1933.

DISEASE.	ADMISSIONS.												DEATHS.													
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTALS.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTALS.
Scarlet Fever .....	110	102	108	85	87	66	98	123	154	311	351	339	1934	3	...	1	1	1	1	1	3	3	2	6	5	27
Diphtheria .....	8	3	6	8	11	4	4	9	12	8	13	9	95	1	...	...	...	1	...	...	1	...	1	4	2	10
Diphtheria Carriers.....	...	1	...	2	8	...	...	1	2	1	...	4	19	...	...	...	...	...	1	...	...	...	...	...	...	...
Enteric Group Fevers.....	...	1	...	2	...	4	5	5	3	10	3	1	34	...	...	...	...	...	1	...	...	2	...	...	...	4
Dysentery.....	1	2	12	3	8	5	4	6	12	9	8	5	75	...	1	2	3	3	2	...	...	1	...	...	...	4
Measles .....	6	19	23	22	26	15	9	5	...	...	...	...	125	4	1	2	...	...	...	...	...	...	...	...	...	16
Rubella.....	...	...	...	...	...	...	...	...	...	...	...	...	10	...	...	...	...	...	...	...	...	...	...	...	...	...
Varicella .....	3	...	1	...	3	...	...	...	...	...	3	1	11	...	...	...	...	1	...	...	...	...	...	...	...	1
Mumps .....	...	2	1	1	...	1	3	...	...	...	...	...	8	...	...	...	...	...	...	...	...	...	...	...	...	...
Anthrax.....	...	...	...	...	...	...	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Pertussis .....	2	2	2	1	...	1	1	...	1	...	...	...	10	...	1	1	...	...	...	...	...	1	...	...	...	3
Epidemic Cerebro-Spinal Meningitis.....	9	5	12	4	8	4	1	5	7	2	10	6	73	4	2	5	3	4	1	...	3	3	1	3	2	31
Other forms of Meningitis...	...	1	1	...	1	4	...	3	1	...	...	...	11	...	...	1	...	1	2	...	2	...	...	...	...	7
Polio-myelitis.....	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	1
Encephalitis Lethargica.....	...	1	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1
Pneumonia .....	31	13	19	14	8	15	7	8	8	8	...	15	154	11	6	4	2	...	1	2	3	2	...	...	...	34
Bronchitis.....	1	2	3	1	1	1	1	2	...	...	1	2	15	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenza .....	18	2	1	...	3	2	1	...	1	...	2	...	30	1	...	...	...	...	...	...	...	...	...	...	...	1
Other Respiratory Diseases	...	2	2	...	3	1	...	...	2	1	1	...	12	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas.....	12	16	7	10	10	4	8	5	8	10	12	14	116	4	1	...	1	...	...	2	...	1	...	...	...	15
Skin and Septic Conditions	4	2	7	6	5	2	3	9	3	7	6	4	58	...	...	1	1	...	...	...	...	1	...	...	...	3
Puerperal Pyrexia .....	...	...	1	...	...	...	1	...	...	...	...	2	4	...	...	...	...	...	...	...	...	1	...	...	...	2
Tonsilitis .....	7	3	3	9	7	3	9	8	11	12	22	25	119	...	...	...	1	...	1	1	...	...	...	...	...	4
Other Gastro-Intestinal Diseases .....	2	...	5	6	5	5	3	6	11	7	1	3	54	...	...	...	...	...	...	1	...	...	...	...	...	1
Ophthalmia Neonatorum ...	...	...	...	...	...	...	1	2	...	...	...	1	4	...	...	...	1	...	...	...	...	...	...	...	...	...
General Diseases .....	...	...	1	2	1	...	...	2	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...	...	1
Injuries.....	...	...	...	...	2	...	...	...	...	...	1	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...
Unclassified.....	6	7	6	2	2	2	5	6	4	5	3	7	55	...	...	1	...	...	...	...	1	...	...	...	...	2
TOTALS .....	220	186	221	178	199	139	165	205	240	391	447	449	3040	28	13	18	13	11	9	7	14	13	9	14	19	168



**Length of Stay in Hospital of Early Fatal Cases.**—The following cases died within a short period after their admission to Hospital :—

	<i>Within 24 hours.</i>	<i>Within 48 hours.</i>
Scarlet Fever .....	3	2
Diphtheria .....	4	1
Typhoid.....	1	2
Dysentery.....	2	...
Measles .....	2	1
Pertussis .....	...	1
Epidemic Cerebro-spinal Meningitis .....	8	3
Poliomyelitis.....	1	...
Pneumococcal Meningitis .....	1	...
Pneumonia .....	9	5
Erysipelas .....	1	1
Puerperal Septicæmia.....	1	...
Streptococcal Tonsillitis .....	3	...
Influenza—Bronchitis .....	1	...
Pemphigus Neonatorum .....	...	1
Premature Birth.....	1	...
Cerebral Hæmorrhage .....	1	...
Total.....	39	17

**Average Stay in Hospital during the last Twenty-six Years.**

YEARS.	All Cases.		Scarlet Fever.		Diphtheria (including carriers).		Enteric Fever.		Other Diseases.	
Average.	No.	Average Stay in Days.	No.	Average Stay in Days.	No.	Average Stay in Days.	No.	Average Stay in Days.	No.	Average Stay in Days.
1908-12...	1,054	46.7	599	51.7	326	41.3	68	46.3	61	29.6
1913-17...	1,538	39.6	929	45.6	220	39.9	70	47.4	318	20.6
1918-22...	1,408	31.2	758	37.1	215	43.2	15	46.6	420	16.8
1923-27...	1,419	31.9	751	35.2	185	44.3	21	54.0	462	21.1
1928 .....	1,294	22.5	452	29.3	205	33.6	25	44.5	612	12.9
1929 .....	1,713	21.7	543	29.7	247	29.6	38	42.2	885	13.6
1930 .....	1,649	23.9	584	32.5	194	34.7	66	44.3	805	13.5
1931 .....	2,347	27.3	989	36.5	113	46.3	21	50.2	1224	17.8
1932 .....	2,143	30.3	1120	35.2	162	57.5	33	47.0	828	17.7
1933 .....	3,040	27.6	1934	32.7	114	61.6	34	41.2	958	12.7

**DIPHTHERIA.**

114 cases were admitted to hospital. 69 of these were simple faucial or tonsillar cases, and in two others the infection was limited to the nose. There was one death in this group. In a group of 17 faucio-pharyngeal cases, with varying degrees of nasal involvement, there were seven deaths—equivalent to a case mortality of 41.2 per cent.



There were six cases of laryngeal or tracheal diphtheria of whom two, or 33.3 per cent. died. In one of these cases the obstruction was so considerable as to require tracheotomy shortly after admission to the City Hospital, but the child died a few hours later.

The case mortality of the whole series of 114 cases was 8.8 per cent., a figure considerably higher than those for the two previous years which were 3.7 per cent. in 1932 and 5.3 per cent. in 1931 respectively. There was again a comparatively high mortality among the faucio-pharyngeal cases with nasal involvement.

In fifteen cases, where virulent organisms persistently remained in the throat after recovery from the disease, tonsillectomy was performed. In every case this procedure rendered the patient free from infection after a short period.

### SCARLET FEVER.

During the year 1933, 1,934 cases of scarlet fever were admitted to Walker Gate, as against 1,120 in 1932. This figure is the largest number of scarlet fever admissions for any year since the hospital was opened.

The autumn of the year saw the beginning of the most extensive epidemic of scarlet fever in the City since the year 1884.

The scarlet fever admissions have shown a steady increase for the five previous years as indicated in the table below. In August, 1933, the admissions for the month numbered 123, and in the four subsequent months the numbers were 154, 311, 351 and 339, respectively. On the night of November 30th there were 350 cases of scarlet fever in the hospital.

All the available accommodation was utilised and certain special measures had to be taken to meet the emergency. The wards both of the Isolation section and the Smallpox section of the Hospital on the Town Moor were opened and rapidly filled up with convalescent cases, and to do this temporary Nursing and Domestic Staff had to be engaged. The Pavilion at Walker Gate, which usually accommodates thirty of the tuberculosis patients, had also to be requisitioned for fever cases. It was further found necessary to reduce slightly the period for which "clean" cases were retained in hospital.



The prevailing type of scarlet fever remained, for the most part, mild, but the mortality rate was higher than for the previous year—1.4 per cent. instead of 0.8 per cent. The complication attack rate was lower, 32.0 per cent., as contrasted with 40.0 per cent.

Scarlet fever antitoxin has been used to a somewhat less extent than in previous years. The numbers and relative proportions of patients receiving this form of treatment for the period 1926-1933, are as follows :—

	1926	1927	1928	1929	1930	1931	1932	1933
Scarlet Fever Cases admitted.....	831	741	452	543	584	989	1120	1934
Number treated with Antitoxin.....	78	172	177	169	249	483	380	436
Percentage treated with Antitoxin...	9.5	20.3	39.2	31.1	42.6	48.8	33.9	22.5

Scarlet fever antitoxin has now been in use for about eight years, and opinions as to its value and its limitations are becoming more definite.

It seems clear that while it is very efficacious in the treatment of severe cases showing signs of toxæmia, and of considerable value in true "toxic" cases, its power to prevent the onset of complications is negligible, and furthermore, it is of little value in the treatment of these complications or the septic sequelæ of scarlet fever.

The general consensus of opinion seems to be that it should be reserved for the treatment of the more severe cases, and that its routine use in mild cases of scarlet fever is not advisable.

In the following table is summarised the statistical information regarding all cases of scarlet fever treated during the year under review :—

SCARLET FEVER.	Num- ber.	Per- centage treated with Anti- toxin.	Per- centage with Compli- cations.	Mor- tality Rate.	Return Case Rate.	Average stay in Days in Hospital.		
						All Cases.	Com- plicated Cases.	Non- compli- cated Cases.
All Cases ...	1,934	22.5	32.0	1.4%	5.5%	32.7	47.6	25.6
Antitoxin Cases .....	436	100	37.0	3.9%	5.0%	35.6	50.6	26.7
Non-Anti- toxin Cases	1,498	Nil.	30.5	0.67%	5.6%	31.8	46.6	25.4



## PERCENTAGE INCIDENCE OF COMPLICATIONS.

	Rhin- orrhœa.	Ot- orrhœa.	Adenitis.	Rheu- matism.	Album- inuria.	Neph- ritis.	Cardiac.	Other Complica- tions.
All Cases...	12.2	9.4	5.2	0.31	2.6	0.67	0.15	1.4
Antitoxin Cases ...	13.1	12.8	5.7	0.69	2.7	0.23	0.23	1.6
Non-Anti- toxin Cases ...	11.9	8.4	5.1	0.2	2.6	0.8	0.13	1.3

**Otorrhœa and Rhinorrhœa.**—The work of the Consulting Oto-Rhinologist to the Hospital (Mr. W. Frank Wilson), in the treatment and supervision of scarlet fever cases complicated by otorrhœa or rhinorrhœa has been continued along lines developed in recent years.

The incidence of these complications was high, though a little lower than last year. 418 cases occurred in 1934 admissions—a complication rate of 21.6 per cent., as contrasted with 26.9 per cent. in the previous year.

The distribution of these cases according to whether or not they were treated with scarlet fever antitoxin, and their respective stay in hospital, are shown in the following table :—

		Number of Cases.	Average stay in Hospital (days).
Non-Antitoxin Cases .....	Rhinorrhœa .....	179	37.7
	Otorrhœa .....	126	59.2
Antitoxin Cases .....	Rhinorrhœa .....	57	41.5
	Otorrhœa .....	56	64.4
	Total .....	418	48.3

The average stay per patient of cases in this group was 48.3 days, as contrasted with the figure given for 1932, namely, 48.8 days.

In the treatment of these patients it was found necessary to perform fifty-eight operations—nineteen for the removal of tonsils and adenoids, thirty-eight for mastoidectomy, and one paracentesis tympani.



*Subsequent Progress.*—As in previous years, supervision of all cases of rhinorrhœa and otorrhœa has been maintained after their discharge from hospital, and every one of the 418 cases of this type has been visited at varying intervals. The result of these visits showed that amongst 236 cases of rhinorrhœa, nine or 3.8 per cent. still had slight nasal discharge, whilst sixteen or 8.8 per cent., of the cases of otorrhœa had slight persisting deafness or discharge from the ear.

All the cases in which the nasal or aural discharge has persisted have been kept under observation by Mr. Frank Wilson at the Out-Patient Department of the Royal Victoria Infirmary.

**“ Return ” Cases.**—The year’s total admissions of scarlet fever cases, which numbered 1,934, produced 107 “ Return Cases,” a percentage of 5.5. These arose from 96 “ Infecting Cases,” a percentage of 5.0.

#### SEASONAL OCCURRENCE.

QUARTER.	Total Scarlet Fever Admissions.	“ Infecting ” Cases.		“ Return ” Cases.	
		No.	Percentage.	No.	Percentage.
January to March.....	320	18	5.6	18	5.6
April to June.....	238	5	2.2	5	2.2
July to September.....	375	16	4.2	18	4.8
October to December.....	1,001	57	5.7	66	6.6

Of the 96 “ infecting ” cases (a) 52 had no complications or discharges whilst in hospital, and remained “ clean ” after reaching home, (b) 15 had no complications whilst in hospital, but developed discharges after reaching home, while (c) 29 had complications whilst in hospital, but were “ clean ” on discharge.

The figure of 5.0 for the percentage of “ Infecting cases ” is high, and has only once been exceeded in recent years, but the high incidence of the disease, and the necessity for curtailing the normal period of detention in hospital, would both account, to some extent, for the large number of these cases.



“ RETURN ” CASES FOR YEARS 1906-1933.

YEARS.	Total Scarlet Fever Admitted.	“ Infecting ” Cases.		“ Return ” Cases.	
		No.	Percentage.	No.	Percentage.
1906-10 ...	2,203	63	2·8	82	3·7
1911-15 ...	5,185	217	4·2	251	4·8
1916-20 ...	3,202	104	3·2	112	3·5
1921-25 ...	3,850	93	2·4	105	2·7
1926.....	831	31	3·7	33	3·9
1927.....	750	25	3·3	26	3·5
1928.....	452	7	1·5	6	1·3
1929.....	543	31	5·7	29	5·3
1930.....	584	17	2·9	16	2·7
1931.....	989	37	3·7	39	3·9
1932.....	1,120	49	4·4	56	5·0
1933.....	1,934	96	5·0	107	5·5

**ERYSIPELAS.**

Of recent years erysipelas has shown a tendency to become one of the commoner and severer infectious diseases prevailing in the City. Its incidence and mortality approximate roughly to those of diphtheria, with the notable exception that while the latter is a disease of children and young people, erysipelas principally attacks the middle-aged and elderly.

In the following table the number of notifications of erysipelas, the deaths caused by the disease, and the case mortality rate are detailed for the years 1926-1933. In addition, similar information is given for such of these cases as were admitted to the City Hospital, together with the duration of their stay in hospital.

YEAR.	Total Notifica- tions.	Deaths.	Mor- tality Rate. per cent.	CITY HOSPITAL.			
				Admis- sions.	Deaths.	Mor- tality Rate. per cent.	Dura- tion of stay in Hospital Days.
1933 .....	264	12	4·5	116	15	12·9	17·4
1932 .....	205	13	6·4	100	11	11·0	14·6
1931 .....	218	11	5·0	91	4	4·4	14·0
1930 .....	208	12	5·8	107	11	10·3	11·3
1929 .....	220	11	5·0	85	8	9·4	13·0
1928 .....	234	19	8·1	49	6	12·2	12·6
1927 .....	212	12	5·7	51	2	3·9	14·5
1926 .....	172	5	2·9	31	2	6·5	25·6



The mortality rate is comparatively high. In 1933 this was 12.9 per cent. for all cases of erysipelas treated in hospital—as contrasted with 11.0 per cent. in 1932 and 4.4 per cent. in 1931. Of the 116 cases admitted to hospital, 37 were given antitoxin, of whom 7 or 18.9 per cent., died. Among the 79 non-antitoxin cases there were 8 deaths, giving a mortality rate of 10.1 per cent.

### Mixed Infections.

23 patients, or 0.75 per cent. of those sent into hospital were found, on or shortly after admission, to be suffering from or incubating two distinct infectious diseases, as follows :—

Scarlet Fever with Diphtheria.....	2
Scarlet Fever with Measles .....	4
Scarlet Fever with Mumps .....	5
Scarlet Fever with Varicella.....	2
Scarlet Fever with Pertussis .....	3
Measles with Pertussis .....	5
Scarlet Fever with Rubella .....	2
<hr/>	
Total .....	23
<hr/>	

### Cross Infections.

During the year 75 patients, or 2.5 per cent. of the total admissions contracted a second infection in the wards of the hospital. The details are as follows, the primary infection being stated first :—

Scarlet Fever with Dysentery.....	2
Scarlet Fever with Measles .....	3
Scarlet Fever with Varicella .....	53
Scarlet Fever with Rubella .....	4
Scarlet Fever with Varicella and Measles.....	2
Scarlet Fever with Pertussis.....	3
Scarlet Fever with Measles and Rubella.....	2
Scarlet Fever with Mumps .....	1
Scarlet Fever with Varicella and Rubella.....	2
Diphtheria with Scarlet Fever .....	1
Pertussis with Scarlet Fever.....	1
Pneumonia with Dysentery.....	1
<hr/>	
Total.....	75
<hr/>	

There were two deaths (1) scarlet fever with pertussis, and (2) scarlet fever with chicken-pox and measles.



### Staff Sickness.

The incidence of sickness amongst members of the Nursing and Domestic staffs was still somewhat high during 1933, but showed a slight improvement on 1932. The figures were :—

*Nursing staff.*—85 of the Nursing staff were off duty owing to sickness for a total of 1,643 days ; 15 suffered from tonsillitis, 5 from mild respiratory diseases, 15 from influenza, 10 from skin disorders or septic conditions, 1 from enteric fever, and 3 from rheumatism, one of whom had tonsillectomy performed. Three were suffering from the effects of minor accidents, and three from unclassified conditions. The remainder were nursed in their own homes.

*Domestic staff.*—55 were off duty through sickness for a total of 655 days. 5 suffered from influenza, 7 from skin disorders or septic conditions, and 6 from tonsillitis. Two suffered from the effects of minor accidents, and 9 from miscellaneous ailments of slight degree.

Since the number of admissions to the hospital was larger than in any previous year since its opening, the staff were, for long periods, working under considerable pressure, and this fact may account to some extent for the amount of sickness. The new extensions of the Nurses' Home were brought into use in October, and it is hoped that in future years the effect of the greatly improved housing of the nursing and domestic staffs will be reflected in a lesser incidence of sickness.

During the year the practice of immunising the staff against scarlet fever, diphtheria, and the enteric group of fevers has been carried out as previously. One nurse contracted enteric fever while working on the enteric ward. This was the first case which has occurred in the Hospital since 1915, the year after routine inoculation against enteric fever was first introduced. The nurse had undergone the routine course of inoculation less than two years previous to her attack, which was fortunately mild. The case goes to prove the necessity for strict observance of the prescribed nursing technique when dealing with diseases of this type.

The practice, started in 1930, of subjecting all nurses and members of the domestic staff to an intradermal tuberculin test to determine their susceptibility to tuberculosis, has been continued in the past year. In addition, an X-Ray photograph of the chest of each individual is taken and filed. Should any condition at all suspicious of tuberculosis be discovered, the affected person is not employed on the Sanatorium.



SMALLPOX AND ISOLATION HOSPITALS,  
TOWN MOOR.

Owing to the disappearance of smallpox from the neighbourhood of Newcastle upon Tyne, it was not found necessary to bring the wards of the Smallpox Hospital into use for that disease at any time throughout the year.

The wards of both Hospitals, however, were utilised to cope with the scarlet fever epidemic which has already been mentioned, and proved of the greatest value. The wards were opened at the beginning of October to accommodate convalescent cases, and at the height of the epidemic in December, 150 cases were being nursed in them. A nursing staff of 19 made up of a few trained staff from Walker Gate assisted by temporary nurses was required to deal with the cases, and also additional domestics.

E. F. DAWSON-WALKER, M.D.,  
*Deputy Medical Superintendent.*

*City Hospital for Infectious Diseases,*  
*Newcastle upon Tyne,*  
*12th May, 1934.*



### DISINFECTION, Etc.

7,635 cases of notifiable infectious disease were inquired into by the Infectious Disease Inspectors and Health Visitors, and, with the exception of measles and chickenpox, the houses or rooms connected therewith disinfected by spraying with formalin. In connection with cases of tuberculosis, 783 houses, including 858 rooms, were similarly disinfected. 787 visits were made, and disinfection was also carried out in 201 special cases.

#### INFECTED ARTICLES TREATED IN THE DISINFECTING APPARATUS AT THE CITY HOSPITAL FOR INFECTIOUS DISEASES, WALKER GATE.

ARTICLES FROM CITY.		ARTICLES—HOSPITAL PROPERTY.	
1933	1932	1933	1932
30,534	23,247	14,900	15,514

8,887 articles were also disinfected at the Smallpox Hospital.

The staff have thus dealt with 54,321 articles during the year.

Fluid disinfectant, in half-pint tins, was given out free on the order of the special inspectors, for home use in connection with infectious disease. Every precaution was taken to ensure that the disinfectant was properly and economically used.

#### DISINFECTANTS DISTRIBUTED—1933.

FROM	FOR INFECTIOUS DISEASES.	FOR PHTHISIS.
	FLUID ( $\frac{1}{2}$ pint tins.)	FLUID ( $\frac{1}{2}$ pints.)
Health Department .....	71	...
Tuberculosis Dispensary .....	...	640
Corporation Yard, Benwell .....	20	...
TOTAL .....	91	640

### BACTERIOLOGICAL INVESTIGATIONS, 1933.

The following is a report on the bacteriological examinations carried out on behalf of the Health Department of the Newcastle Corporation, at the Public Health Laboratory (University of Durham College of Medicine), Armstrong College, Newcastle upon Tyne.



A total of 6,393 specimens were submitted for examination. The nature of the investigations and the results obtained are given under the various sections as follows :—

BACTERIOLOGICAL EXAMINATIONS :—

	DIPHTHERIA.			PHTHISIS.			SWABS FOR HAEMOLYTIC STREPTOCOCCI.		
	Total.	Posi- tive.	Nega- tive.	Total.	Posi- tive.	Nega- tive.	Total.	Posi- tive.	Nega- tive.
No. of Exam- inations ...	1,265	75	1,190	534	78	456	54	12	42
Percentage positive ...	5·9			14·6			22·2		

AGGLUTINATION REACTIONS :—

	Agglutination Tests for the Enteric Fevers.			Agglutination Tests against Brucella Abortus and Brucella Melitensis.		
	Total.	Positive.	Negative.	Total.	Positive.	Negative.
No. of Exam- inations ...	92	*41	51	8	1	7

\* Of these positive results :—  
21 agglutinated B. typhosus,  
5       ,,       B. paratyphosus A.  
15       ,,       B. paratyphosus B.

MILK EXAMINATIONS :—

1. For tubercle bacilli by animal inoculation :—

Total.	Found.	Not found.	Percentage positive.
388	8	380	2.0

2. Bacterial content of organisms other than the tubercle bacillus (the colon bacillus being taken as the indicator) :—

Colon bacilli not found in 1.0 cc.	or less .....	39	} 120
„ „ found in 1.0 cc.	but not in less .....	32	
„ „ „ in 0.1 cc.	„ .....	30	
„ „ „ in 0.01 cc.	„ .....	19	
<hr/>			
„ „ „ in 0.001 cc.	„ .....	16	} 36
„ „ „ in 0.0001 cc.	„ .....	13	
„ „ „ in 0.00001 cc.	„ .....	7	
			<hr/>
			156
			<hr/>



In addition to the colon bacillus indicator as mentioned above, a total estimation of the number of organisms present was carried out on all the samples submitted during the year, and taking 200,000 organisms per cc. as the standard for Grade A milk—

112 samples were below 200,000 per cc. and  
44 samples were above 200,000 per cc.

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156

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3. 234 samples of “Certified” and Graded Milk were examined during the year in accordance with the scheme of the Ministry of Health under the Milk and Dairies (Amendment) Act, 1922, and Milk (Special Designations) Order, 1923.

The following results were obtained :—

	Total.	Satisfied the Test.	Failed to satisfy the Test.
“Certified” Milk .....	51	44	7
“Grade A” Milk (T.T.) .....	154	124	30
“Grade A” Milk.....	15	14	1
Pasteurised Milk.....	14	11	3
	<hr/> 234	<hr/> 193	<hr/> 41

#### WATER EXAMINATIONS :—

##### (i) *Routine Samples.*

Class I. (Colon bacilli not found in 100 cc. or less) .....	116
Class II. ( „ „ found in 100 cc. but not in less) .....	38
Class III. ( „ „ found in 10 cc. but not in less) .....	27
Class IV. ( „ „ found in 1 cc. but not in less) .....	11
	<hr/> 192

(ii) During the months of August and September, 28 samples of water were examined from the several Corporation Swimming Baths in the City, and the following is a summary of the results obtained :—

Colon bacilli not found in 100 cc. or less.....	18
„ „ found in 100 cc., but not in less .....	6
„ „ found in 10 cc., but not in less.....	2
„ „ found in 1 cc., but not in less .....	2
	<hr/> 28

(iii) In addition to the above, the undermentioned samples of water were examined and detailed results of the examinations were furnished at the time :—

From Barrasford Sanatorium .....	4
From a dwelling-house in the district of Fenham .....	1
From Paddling Pools in four of the City Parks.....	4



## VENEREAL DISEASES :—

	Serological reactions.	Microscopical examinations.	Total.
From Treatment Centre.....	1,177	1	1,178
From Private Practitioners .....	1,399	104	1,503
TOTAL .....	2,576	105	2,681

## OTHER EXAMINATIONS :—

(a) **Diphtheria.**—In addition to the daily routine examinations, it was arranged that from the 14th August, 1933, the necessary cultural examinations for the typing of *B. diphtheria* into the types of Anderson, McLeod and others should be undertaken, and later (October, 1933) it was also arranged to carry out an intradermal virulence test on every positive case from Newcastle patients.

This additional work was carried out as arranged and the following results were obtained to the end of the year.

In respect of virulence tests on cultures from patients retained in the City Hospital as “carriers,” this test has been done as usual and the results are given in the summary below.

Diphtheria types.			B. Hofmanni.	Xerosis type of bacilli.	No diphtheria bacilli isolated.	Total.
Gravis.	Mitis.	Inter-medius.				
9	26	16	8	2	9	70

## VIRULENCE TESTS.

Intradermal.		Subcutaneous.	
Positive.	Negative.	Virulent.	Non-Virulent.
22	3	17	16
25		33	



(b) **Enteric Fevers.**—The following specimens of fæces were received and examined for organisms of the enteric group :—

From the City Infectious Diseases Hospital.....	165 specimens.
From the City Health Department.....	4 „
From the Newcastle General Hospital .....	19 „
	<hr/>
	188 „
	<hr/>

In this total of 188 specimens,

77 were positive, and  
111 were negative.

Typhoid bacilli “ H ” being isolated.....	17 times.
Typhoid bacilli “ O ” being isolated.....	2 „
B. paratyphoid B. being isolated .....	58 „

Other organisms isolated were :—

B. Morgan No. 1 .....	43 „
B. pyocyaneus .....	4 „
B. paracolon .....	12 „
Late lactose fermenting bacilli .....	4 „
B. proteus .....	3 „

The following specimens of urine were received and examined for organisms of the enteric group :—

From the City Infectious Diseases Hospital..... 2 specimens.

From one specimen B. paratyphosus B. was isolated, the other one being negative.

B. Morgan No. 1 and B. fæcalis alkaligenes were also isolated from the negative specimen.

(c) **Bacillary Dysentery and Food-poisoning group.**—The examination of fæces for dysentery bacilli and organisms of the food-poisoning group from suspected cases has been continued throughout the year, and the following results were obtained :—

	From City Infectious Diseases Hospital.	From City Health Depart- ment.	From New- castle General Hospital.	Total Speci- mens.
Total .....	262	21	57	340
Positive .....	95	9	12	116
Negative.....	167	12	45	224
Flexner bacillus .....	74	7	9	90
Sonne III. ....	18	2	1	21
Newcastle Dysentery bacillus .....	1	...	...	1
An anomolous type of dysentery bacillus .....	2	...	1	3
B. Aertrycke .....	...	...	1	1
	95	9	12	116



The following is a list of the types of Flexner bacilli obtained :

	V.	W.	X.	Y.	Z.	XZ.	Atypical Dysentery bacillus.	Total.
<i>From—</i>								
City Infectious Diseases Hospital .....	...	11	4	...	30	28	1	74
City Health Department.....	...	3	1	...	2	1	...	7
Newcastle General Hospital ....	...	2	1	...	2	4	...	9
	...	16	6	...	34	33	1	90

Other organisms isolated were :—

B. Morgan No. 1.....	17 times.
B. pyocyaneus.....	2 „
B. paracolon .....	23 „
B. proteus .....	3 „
Late lactose fermenting bacilli.....	5 „
Other non-lactose fermenting bacilli .....	3 „

(d) **Meningitis (various).**—31 specimens of cerebro-spinal fluid were received and examined during the year, and commencing during the month of May it was arranged that the typing of any Meningococci isolated should be undertaken.

The following is a summary of the results obtained :—

Meningococci .....present in .....	9 specimens.
Tubercle bacilli .....present in .....	4 „
Other organisms ...present in .....	4 „
Negative and no growth in.....	6 „
Inconclusive.....	8 „
	<hr/> 31 „ <hr/>
Meningococci Type III.....	6 „
No agglutination .....	2 „
Not typed.....	1 „
	<hr/> 9 „ <hr/>

(e) **B. Anthracis.**—Two specimens from suspected cases were examined. Both were positive microscopically and one was also virulent on inoculation.

One shaving brush was also examined with negative result.

(f) **Miscellaneous.**—The following specimens were also received and reports furnished :—

- 1 cultural examination of blood.
- 2 specimens of sera for B. dysenteriae group.
- 1 specimen of pleural fluid for cultural examination.
- 2 direct examinations for Vincent's Angina.



The following organs from a post-mortem were also examined :—

Intestines.

(g) **Newcastle General Hospital :—**

A number of bacteriological examinations for the above-named hospital have again been carried out in this laboratory during the year 1933, and the following is a summary of the various specimens received :—

The numbers and results of the fæces examinations (enteric-dysentery group) are given under the respective diseases.

Nature of Investigation.	No. of Specimens, 1933.
Autogenous vaccines .....	2
Blood cultures for organisms.....	11
Catgut for sterility .....	2
Cerebro-spinal fluids .....	8
Fæces for tubercle bacilli .....	6
Pleural fluids.....	4
Pus from various sources .....	4
Swabs from various sources .....	9
Synovial fluid.....	1
Urine for organisms.....	5
Urine for animal inoculation.....	1
Total .....	53



The following table gives a complete summary of the various examinations, including the year 1932, for comparison :—

Nature of Investigation.	1932.	1933.
Throat swabs for B. Diphtheria .....	1,515	1,265
Sputa for Tubercle bacilli.....	651	534
Swabs for Hæmolytic Streptococci.....	2	54
Agglutination tests :—		
Against the Enteric Fevers.....	178	92
Against Brucella Abortus.....	7	8
Milk Examinations :—		
For the Tubercle Bacillus.....	392	388
For Bacillus Coli and Count.....	178	156
Graded Milk .....	226	234
Water Examinations :—		
For Bacillus Coli.....	196	192
For complete Examination.....	47	37
Venereal Diseases .....	2,675	2,681
Other Examinations :—		
(a) Diphtheria		
Type of bacilli.....	...	70
Intradermal tests .....	...	25
Virulence tests .....	75	33
(b) Enteric Fevers—Fæces .....	257	188
Urine.....	8	2
(c) Bacillary Dysentery .....	255	340
Food-poisoning group .....	1	
(d) Meningitis (various) :—		
C.S. Fluid.....	48	31
Post-nasal swabs.....	1	...
(e) B. Anthracis .....	2	3
(f) Miscellaneous .....	29	7
(g) Newcastle General Hospital.....	200	53
Total .....	6,943	6,393

(Signed) S. H. WARREN, M.R.C.S. (Eng.), D.P.H. (Lond.),

*Director, Public Health Laboratory.*

*University of Durham College of Medicine,*

*Newcastle upon Tyne,*

*5th May, 1934.*







REPORTS OF THE  
TUBERCULOSIS MEDICAL OFFICER  
AND  
MEDICAL SUPERINTENDENT,  
BARRASFORD SANATORIUM.

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## IV.—TUBERCULOSIS.

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TUBERCULOSIS DISPENSARY,  
BARRASFORD SANATORIUM.







## TUBERCULOSIS.

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### Report of the Tuberculosis Medical Officer.

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TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I beg to submit, herewith, my report for the year 1933.

There has been very little alteration in the work of the Tuberculosis Section of the Health Department during this year, the following points, however, merit special mention.

A trained nurse has been appointed to do radiography at the Sanatorium Pavilions, City Hospital for Infectious Diseases, Walker Gate. Her assistance and the fact that patients resident in the West of the City are being X-rayed at Newcastle General Hospital, have relieved the medical staff of routine work and they are now able to devote more time to individual patients, home visiting and the seeing of contacts.

A Medical Officer from the Ministry of Health carried out a survey of the whole of the Tuberculosis Scheme in Newcastle upon Tyne in August, 1933. As you know, from the official letter following the survey, improvements were asked for with regard to home visiting, contact seeing and X-ray apparatus.

Home visiting and contact seeing have been improved since this and it is hoped that the numbers will be up to the standard set by the Ministry of Health.

The improvement of the X-ray apparatus is at present under consideration and is the subject of a special report. The suggestion that this improvement should be made is, however, no new affair. I mentioned it in my Annual Reports for the years 1929 and 1930.

In January, 1931, a Sub-Committee of the Health Committee visited the Tuberculosis Dispensary in connection with this, but they decided at that time to leave the matter in abeyance. I again brought the matter to your notice in the Annual Report of 1931, but no action was taken to provide a new X-ray apparatus at the Tuberculosis Dispensary. Without this, patients always have to make additional journeys to be X-rayed either to the Sanatorium Pavilions, City Hospital for Infectious Diseases,



Walker Gate, or to Newcastle General Hospital. This wastes time and in the majority of cases is inconvenient. In addition, the waiting room accommodation in both these Hospitals is very poor, while there is ample waiting and dressing room at the Tuberculosis Dispensary.

The Tuberculosis Dispensary is the centre of the Tuberculosis Scheme and at it full facilities should exist for the most modern and rapid methods of diagnosis. I hope that, in the improvements which will result from the Ministry's survey, the provision of an X-ray apparatus will be possible there.

Slight diminution has taken place in the number of cases notified. The death rate from all forms of tuberculosis is the lowest yet recorded in Newcastle upon Tyne, but it must be remembered that at present the number of sputum positive cases known to the Dispensary and either attending there or being visited in their homes, is now larger than it has ever been, namely 741, an increase from 595 in 1926. All these cases are potential sources of infection and, until this number shows a diminution, the tuberculosis problem will remain serious.

No action has been taken under the Public Health Act of 1925 (compulsory removal of patients to hospital) or under the Public Health Prevention of Tuberculosis Regulations, 1925, dealing with milk.

As before, Artificial Pneumothorax has been used upon every suitable case, the details of the number of treatments given are in my Report.

The Voluntary Tuberculosis Care Council has continued its useful work and is in very close co-operation with the Tuberculosis Scheme. At the time of writing 110 beds are on loan and 276 patients received help during the year 1933.

There have been no changes in the staff. I wish to acknowledge their loyal support and interest.

Yours faithfully,

GEORGE HURRELL, M.D., D.P.H.,

*Tuberculosis Medical Officer.*

*Tuberculosis Dispensary,*

*91, New Bridge Street,*

*Newcastle upon Tyne, 2.*

*9th April, 1934.*



## REPORT.

**Notifications.**—668 notifications were received during the year but some were duplicates, so that the total number of new cases was 619, of whom 428 were certified to be suffering from “pulmonary” and 191 from “non-pulmonary” tuberculosis.

The details as regards sex and age are given in the accompanying table.

SUMMARY OF NOTIFICATIONS DURING THE PERIOD, 1ST JANUARY TO  
31ST DECEMBER, 1933.

(THE PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1930.)

AGE PERIODS.	Primary Notifications.												Total Notifications (including Cases previously notified by other doctors).
	0 to 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 and upwards.	TOTAL.	
Pulmonary—													
Males.....	1	5	8	8	31	24	54	43	33	11	4	222	239
Females .....	...	2	8	20	36	33	51	21	24	8	3	206	226
Non-Pulmonary—													
Males.....	2	17	15	13	15	8	5	5	1	...	3	84	89
Females .....	4	16	17	22	13	9	11	5	6	2	2	107	114
TOTALS .....	7	40	48	63	95	74	121	74	64	21	12	619	668

As far as possible every notified case is visited by the nurses and urged to visit the Dispensary for examination and classification with a view to treatment.

Of the 619 cases notified, 479 attended the Dispensary and 46 others were visited in their homes by the Health Visitors in the course of the year. The names of the patients certified to have died from tuberculosis, but not previously notified, are entered in the notification register, so that if the 49 patients in this category, and 36 who died within one week of notification, and were not known to the Dispensary, be deducted, it will be seen that the Dispensary gets into touch with nearly all of the known cases of tuberculosis.

With reference to the 9 cases not accounted for in the above, some were living in institutions, or common lodging houses, and others did not wish to be visited.



A table has been prepared to illustrate these points, and also to show the nature of the institutional treatment afforded to the cases notified during 1933. 294 of the 428 patients notified as suffering from pulmonary tuberculosis were treated in beds belonging to, or controlled by the City Council, and 81 out of a total of 191 patients notified as suffering from forms of tuberculosis other than pulmonary were treated in such beds.

The number of patients dying in the year of notification is also given, and it will be seen that 160 (equal to 26 per cent.) of all the new cases died in the same year as they were notified.

#### NOTIFICATIONS OF TUBERCULOSIS DURING 1933.

Part Affected.	Notifi- cations.	Attended Dispensary.	Visited by Nurse but not attended Dispensary.	Received Institutional Treatment.				Totals.	Died during the Year.
				Barras- ford Sana- torium.	Sanat- orium Pav. Walker Gate.	Stann- ington Sana- torium.	New- castle Gen. Hosp.		
Pulmonary—									
Male .....	222	193	6	45	107	3	...	155	59
Female.....	206	171	18	27	107	5	...	139	45
Non-Pulmonary--									
Male .....	84	54	8	...	...	1	40	41	23
Female.....	107	61	14	...	...	5	35	40	33
TOTALS .....	619	479	46	72	214	14	75	375	160

Cases re-admitted to the Sanatorium Pavilions, Walker Gate, and those transferred to Barrasford Sanatorium during the year, are counted as only receiving treatment on one occasion.

During the year 186 cases (30 per cent. of the total) were notified by the Dispensary Medical Staff.

Practitioners were written to by the Medical Officer of Health when notification appeared to have been neglected.

#### PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1930.

##### NUMBER OF CASES OF TUBERCULOSIS REMAINING ON THE NOTIFICATION REGISTER AT THE END OF YEAR.

Year.	PULMONARY.			NON-PULMONARY.			Total Cases.
	Males.	Females.	Total.	Males.	Females.	Total.	
1925.....	855	608	1,463	340	312	652	2,115
1926.....	744	515	1,259	297	263	560	1,819
1927.....	644	441	1,085	236	204	440	1,525
1928.....	720	443	1,163	294	254	548	1,711
1929.....	744	501	1,245	319	270	589	1,834
1930.....	737	495	1,232	316	264	580	1,812
1931.....	767	501	1,268	298	251	549	1,817
1932.....	801	513	1,314	292	240	532	1,846
1933.....	795	531	1,326	294	270	564	1,890



**Deaths.**—369 deaths were registered as due to some form of tuberculosis, and of these 267 were certified as due to pulmonary tuberculosis and 102 to other forms of the disease.

On these figures the death rates per 1,000 population were :—

	Number of Deaths.	Death Rate per 1,000 Population.
Pulmonary Tuberculosis .....	267	0·93
Non-Pulmonary Tuberculosis .....	102	0·36
Total Tuberculosis Death Rate (uncorrected).....	<u>369</u>	<u>1·29</u>

It must be noted, however, that 10 residents of Newcastle died in other parts of the United Kingdom from tuberculosis (1 pulmonary, 9 non-pulmonary), while 50 of the deaths (14 pulmonary, 36 non-pulmonary), registered in Newcastle, were those of temporary residents.

The corrected deaths and death rates per 1,000 of the population were :—

	Number of Deaths.	Death Rate per 1,000 Population.
Pulmonary Tuberculosis .....	262	0·91
Non-Pulmonary .....	67	0·23
All forms of Tuberculosis (corrected) .....	<u>329</u>	<u>1·14</u>

88·9 per cent. of the pulmonary cases were known to the dispensary staff, 216 having visited the dispensary and an additional 17 having been attended in their homes by the visiting nurses.

28·3 per cent. of the “ non-pulmonary ” were attended at or from the dispensary. This is much lower than the pulmonary cases; the main reason being that 44·8 per cent. of the non-pulmonary cases were not notified before death.

Of 262 deaths from pulmonary tuberculosis the diagnosis was verified bacteriologically in 204 instances, *i.e.*, 77·8 per cent.

3 other dispensary patients who were known to be suffering from pulmonary tuberculosis, and in whose sputum tubercle bacilli had been found, died during the year. The cause of death being registered as: Tuberculosis of Peritoneum, 1; Miliary Tuberculosis, 1; Carcinoma of Bowel, 1.



**Duration of Illness.**—Wherever possible, in pulmonary cases, enquiry was made as to the length of time the deceased had been ill, and the average duration of illness was found to be 46.4 months. As in previous years, important differences were discovered when age and sex were considered, the figures being 50.7 months for adult males, 42.3 months for adult females, and 32.2 months for those below 15 years of age (both sexes).

The period between notification and death was, as one would expect, longer in the adult males than in the adult females and children, but averaged 26.3 months for all cases.

26.7 per cent. of the patients had either not been notified prior to death (6.5 per cent.), or died within 3 months of notification (20.2 per cent.).

Further details and comparative figures for previous years are submitted in the following table :—

RETURN OF DEATHS FROM PULMONARY TUBERCULOSIS OCCURRING IN :—

	Deaths which occurred in these years.							
	Average for 1913-17.	Average for 1918-22.	Average for 1923-27.	Average for 1928-32.	1933.			
					M.	F.	C.	Total.
Persons not notified .....	43	51	33	23	8	7	2	17
„ notified under 1 mth.	35	47	50	38	15	10	4	29
„ between 1 and 3 „	94	48	44	45	9	14	1	24
„ between 3 and 6 „	53	30	38	36	15	10	1	26
Total under 6 months ...	226	183	166	140	47	41	8	96
Persons notified between—								
6 and 12 months	47	46	40	36	16	14	1	31
„ 12 and 18 „ ...	28	21	25	22	12	14	1	27
„ 18 and 24 „ ...	15	15	17	17	9	8	...	17
„ 2 and 3 years.....	20	18	22	21	18	6	1	25
„ over 3 years .....	21	47	53	59	36	26	4	66
TOTALS .....	357	331	324	296	138	109	15	262

The figures for non-pulmonary forms of tuberculosis were even worse, for in 30 instances out of the 67 deaths, the disease had not been notified prior to death.

The records show that 10 of the 17 fatal unnotified cases of pulmonary tuberculosis, and 26 of the 30 fatal unnotified cases of non-pulmonary tuberculosis, died in hospitals ; included in the 26 “ other forms ” were 16 cases of tuberculous meningitis.

**Occupation.**—The nature of the work done and the conditions under which it is carried on have an important bearing on the incidence of disease, and probably account for the excess of adult male over adult female deaths from pulmonary tuberculosis.



**Family History.**—In 101 instances amongst the 236 cases of pulmonary tuberculosis known to the Dispensary who died during the year, *i.e.*, in 43 per cent., there was a history that some near relation was suffering from, or had died of pulmonary tuberculosis. The figures were 39 per cent. for males, and 47 per cent. for females.

**House Accommodation.**—The home conditions of the working classes are intimately associated with occupation and family history as predisposing to tuberculosis. The numbers of rooms in the dwellings occupied by the above 236 persons were as follows :

Rooms in Dwelling.	1	2	3	4	More than 4	Common Lodging Houses.	Not Known.	Total.
Deaths .....	24	64	59	53	29	4	3	236

As regards the type of house occupied, 107 were flats, 71 tenements, 51 self-contained, 4 were common lodging houses, and in 3 cases the particulars were not known.

**Treatment in Institutions.**—It is noteworthy that of the 219 patients suffering from pulmonary tuberculosis who attended the Dispensary and died in 1933, 196, or 89 per cent., had received institutional treatment on one or more occasions. This is a high percentage, and shows what a large proportion of the cases visiting the Dispensary avail themselves of the accommodation provided.

### The Tuberculosis Dispensary.

The number of cases who attended the Dispensary for the first time was 1,059. In addition, there were 210 cases who had been discontinued previous to the year 1933, who returned for examination, and are also counted as new cases in accordance with instructions in Memo. 37/T. Revised, making a total of 1,269.

768 of these were sent by general practitioners, 102 were referred to the Dispensary by the Visiting Nurses, 112 by the Newcastle-upon-Tyne Dispensary, 29 by the Royal Victoria Infirmary, 35 by the School Medical Officer, 24 by the Tuberculosis Medical Staff, 68 by the Medical Staff of the Newcastle-upon-Tyne General Hospital, 18 by the Maternity and Child Welfare, 76 came of their own accord, and smaller numbers from other sources.



360 had been notified previously, and the balance, 909, of whom 186 were notified by the Dispensary Medical Staff, were suspects, or contacts of known cases. Of the 1,269 new cases, 217 had lived with patients known to have tubercle bacilli in their sputum, 46 with patients who had not tubercle bacilli in their sputum, and 46 were home contacts of persons certified to have died of pulmonary tuberculosis. The following table gives the details of the new cases, including contacts :—

NEW CASES EXAMINED, INCLUDING CONTACTS, DURING THE YEAR 1933.  
(First Schedule, Sect. A. & B., Memo. 37/T., Revised).

Diagnosis.	Males.		Females.		Totals.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis .....	164	14	133	17	328
Non-Pulmonary Tuberculosis ...	30	28	21	33	112
Diagnosis not completed.....	22	15	16	23	76
Non-Tuberculous .....	225	132	268	128	753
TOTALS .....	441	189	438	201	1,269

In respect of these new patients, at the end of the year it was found that 34.7 per cent. were suffering from active tuberculosis.

538 were “insured persons,” and 605 were dependents of “insured persons,” leaving only 126 of the uninsured classes.

Of the 210 cases who had been discontinued previous to the year 1933, and returned for examination, 26 were found to be suffering from tuberculosis. Details of these cases are given in the table which follows :—

CASES DISCONTINUED IN PREVIOUS YEARS, AND RETURNED DURING THE YEAR 1933. (INCLUDED IN PREVIOUS TABLE.)

Diagnosis.	Males.		Females.		Totals.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis .....	12	2	6	3	23
Non-Pulmonary Tuberculosis ...	...	1	...	2	3
Diagnosis not completed.....	4	3	3	5	15
Non-Tuberculous .....	50	30	69	20	169
TOTALS .....	66	36	78	30	210

The Tuberculosis Medical Officer visited 44 patients in their homes.



2,498 persons visited the Dispensary during the course of the year, and registered 7,553 attendances.

The total number of complete physical examinations made was 2,085, including 868 males, out of 3,253 attendances ; 651 females, out of 2,284 attendances ; and 566 children, out of 2,016 attendances.

In 31.6 per cent. of the cases who attended the Dispensary tubercle bacilli were found in the sputum ; 45.8 per cent. of the males, 36.7 per cent. of the females, and only 4 per cent. of those under 15 years of age. The details are tabulated below :—

	Number of Patients and Cases who attended the Dispensary during the Year 1933.			
	Total.	Males.	Females.	Under 15 years of age.
“ Sputum Positive Cases ”...	790	474	289	27
“ Negative Cases ” .....	1,708	561	498	649
TOTALS.....	2,498	1,035	787	676

**Sputum Positive Patients.**—The number of living sputum positive patients on the Dispensary Register on January 1st, 1933, was 723 ; during the year 195 of these died, and 46 patients were written off the Dispensary Register (9 recovered, 37 left the district).

The total at the end of the year was 741, consisting of 455 males, 266 females and 20 children. 628 of these patients visited the Dispensary during the year. Of the 113 who failed to attend, 80 were reported by the nurses to be working or fit for work ; 19 were moderately well, while 14 had relapsed, and were mostly confined to bed ; 96 of those who did not attend had been treated at Barrasford Sanatorium, or the Sanatorium Pavilions, Walker Gate. It should be noted that 51 of those who failed to attend were “ disease arrested ” and are, therefore, not expected to attend the Dispensary.

**“ Negative Cases.”**—The records of the patients in respect of whom no tubercle bacilli have been found in the sputum, together with non-pulmonary patients and suspects, are filed separately from those of the sputum positive patients, and 1,708 cases in these categories attended during the year. This number included 561 adult males, 498 adult females, and 649 children. The preponderance of male cases was nothing like so pronounced as in



the sputum positive group, and it is noteworthy that children were much more numerous, constituting 38 per cent. of the total, as opposed to 3.4 per cent. of the bacteriologically verified cases. The majority of these "negative cases" were "suspects" or "contacts."

1,044 cases were removed from the Dispensary Register, these included 46 patients with bacilli in sputum. The details are given in the following table :—

CASES AND PATIENTS WRITTEN OFF THE DISPENSARY REGISTER  
DURING THE YEAR 1933.

(First Schedule, Sect. C., Memo. 37/T., Revised).

DIAGNOSIS.	MALES.		FEMALES.		TOTALS.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis, Recovered ... ..	13	...	9	...	22
Non-Pulm. Tuberculosis, Recovered ... ..	3	4	4	...	11
Non-Tuberculous.....	260	168	291	155	874
Left district, lost sight of, or will not attend Dispensary ...	57	14	48	18	137
TOTALS .....	333	186	352	173	1,044

The number of patients and cases on the Dispensary Register at the end of the year are tabulated below :—

NUMBER OF CASES AND PATIENTS ON DISPENSARY REGISTER  
AT END OF YEAR 1933.

(First Schedule, Sect. D., Memo. 37/T., Revised).

DIAGNOSIS.	MALES.		FEMALES.		TOTAL.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis (T.B. in Sputum) .....	455	7	266	13	741
Pulmonary Tuberculosis (no T.B. in Sputum) .....	205	36	141	37	419
Non-Pulmonary Tuberculosis ...	128	134	107	117	486
Diagnosis not completed.....	19	20	15	27	81
TOTALS .....	807	197	529	194	1,727

The two tables which follow are self-explanatory, and are required by the Ministry of Health under Memo. 37/T., Revised.



## MEMO. 37/T. REVISED. SCHEDULE III. PULMONARY TUBERCULOSIS.

122A

ANNUAL RETURN SHOWING IN SUMMARY FORM (a) THE CONDITION AT THE END OF 1933 OF ALL PATIENTS REMAINING ON THE DISPENSARY REGISTER; AND (b) THE REASONS FOR THE REMOVAL OF ALL CASES WRITTEN OFF THE REGISTER. THE TABLE IS ARRANGED ACCORDING TO THE YEARS IN WHICH THE PATIENTS WERE FIRST ENTERED ON THE DISPENSARY REGISTER AS DEFINITE CASES OF PULMONARY TUBERCULOSIS, AND THEIR CLASSIFICATION AT THAT TIME.

Condition at the time of the last Record made during the year to which the Return relates.	Previous to 1926.					1926.					1927.					1928.					1929.					1930.					1931.					1932.					1933.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
	Class T.B. minus.	Class T.B. plus.				Class T.B. minus.	Class T.B. plus.				Class T.B. minus.	Class T.B. plus.				Class T.B. minus.	Class T.B. plus.				Class T.B. minus.	Class T.B. plus.				Class T.B. minus.	Class T.B. plus.				Class T.B. minus.	Class T.B. plus.				Class T.B. minus.	Class T.B. plus.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		Group 1.	Group 2.	Group 3.	Total (Class T.B. plus).		Group 1.	Group 2.	Group 3.	Total (Class T.B. plus).		Group 1.	Group 2.	Group 3.	Total (Class T.B. plus).		Group 1.	Group 2.	Group 3.	Total (Class T.B. plus).		Group 1.	Group 2.	Group 3.	Total (Class T.B. plus).		Group 1.	Group 2.	Group 3.	Total (Class T.B. plus).		Group 1.	Group 2.	Group 3.	Total (Class T.B. plus).		Group 1.	Group 2.	Group 3.	Total (Class T.B. plus).																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
<i>Disease Arrested—</i>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

(a) Remaining on Dispensary Register on 31st December.

(b) Not now on Dispensary Register and reasons for removal therefrom.



## MEMO. 37/T. REVISED. SCHEDULE III.—Continued. NON-PULMONARY TUBERCULOSIS.

122E

ANNUAL RETURN SHOWING IN SUMMARY FORM (a) THE CONDITION AT THE END OF 1933 OF ALL PATIENTS REMAINING ON THE DISPENSARY REGISTER; AND (b) THE REASONS FOR THE REMOVAL OF ALL CASES WRITTEN OFF THE REGISTER.

Condition at the time of the last Record made during the year to which the Return relates.		Previous to 1926.					1926.					1927.					1928.					1929.					1930.					1931.					1932.					1933.											
		Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.												
(a) Remaining on Dispensary Register on 31st December.	Disease Arrested—																																																				
	Adults—Male.....	...	...	...	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	1	...	...	...	1	3	...	...	...	2	2	...	1	...	...	...	1	...	...	...	...	...	...	...	...							
	Female.....	...	...	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	3	4	...	...	1	1	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...							
	Children.....	1	3	...	2	6	3	3	...	...	6	3	2	1	...	6	2	1	...	5	8	1	3	...	...	2	4	3	5	...	2	10	1	...	...	3	4	...	...	...	4	4	...	...	...	...	...						
	Disease not Arrested—																																																				
	Adults—Male.....	3	...	3	1	7	1	...	1	...	2	...	...	...	...	3	...	...	...	...	3	...	...	...	2	2	5	...	2	1	8	6	1	1	9	8	4	6	3	21	15	7	2	4	28	...	...	...	...	...			
	Female.....	1	...	...	3	4	...	...	...	...	...	2	1	...	...	3	...	...	...	...	...	2	...	...	...	2	5	1	1	1	8	1	3	...	...	4	6	4	2	5	17	7	6	3	6	22	...	...	...	...	...		
	Children.....	14	1	5	5	25	3	2	1	...	6	4	...	...	4	8	5	2	1	2	10	14	7	...	4	25	12	11	4	11	38	14	12	4	24	54	16	12	1	20	49	23	14	4	21	62	...	...	...	...	...		
	Total on Dispensary Register at 31st December.....	19	4	9	12	44	7	5	2	1	15	9	3	1	4	17	11	3	1	7	22	18	10	...	8	36	28	17	7	19	71	22	16	6	31	75	31	22	9	32	94	45	27	9	31	112	...	...	...	...	...		
	Transferred to Pulmonary.....	4	...	...	4	8	...	1	...	1	2	...	1	...	3	4	1	1	1	1	4	...	3	...	...	3	1	...	2	...	3	1	1	2	1	5	...	1	...	1	2	...	...	...	...	...	...	...	...	...	...		
(b) Not now on Dispensary Register and reasons for removal therefrom.	Discharged as Recovered—																																																				
	Adults—Male.....	...	...	...	...	21	2	2	1	...	5	1	...	...	3	4	...	1	1	1	3	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Female.....	...	...	...	...	20	...	...	...	4	4	1	...	...	3	4	...	1	...	...	1	...	2	...	...	2	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	Children.....	...	...	...	...	60	5	2	1	6	14	4	3	...	5	12	3	...	...	3	6	1	...	...	4	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	Lost sight of, or otherwise removed from Dispensary Register.....	...	...	...	...	42	15	3	2	21	41	6	8	2	28	44	11	5	3	26	45	15	5	3	17	40	10	8	1	12	31	5	...	5	8	18	3	5	2	2	12	1	...	...	...	...	1	...	...	...	1		
	DEAD—Adults—Male.....	...	...	...	...	16	3	...	1	1	5	2	1	3	2	8	...	2	...	...	2	1	...	1	3	1	1	3	1	1	2	...	4	2	...	1	...	3	4	...	2	...	6	1	1	...	...	2	...	...			
	Female.....	...	...	...	...	7	...	1	...	...	1	...	1	1	...	2	...	2	...	4	1	3	1	1	6	...	1	1	1	1	3	1	5	1	...	7	1	...	1	...	2	...	1	...	...	...	1	...	...				
	Children.....	...	...	...	...	6	2	2	1	...	5	...	1	1	...	2	3	3	...	...	6	...	1	...	1	4	4	1	1	10	...	4	3	2	9	1	3	1	1	6	...	1	4	...	...	5	...	...	...	...			
Total written off Dispensary Register.....	...	...	...	...	172	27	10	6	32	75	14	14	7	41	76	17	14	6	30	67	18	11	5	23	57	16	14	5	15	50	8	9	10	10	37	9	8	6	3	26	2	3	4	...	9	...	...	...	...				
GRAND TOTALS of (a) and (b) (excluding those transferred to Pulmonary).....		19	4	9	12	216	34	15	8	33	90	23	17	8	45	93	28	17	7	37	89	36	21	5	31	93	44	31	12	34	121	30	25	16	41	112	40	30	15	35	120	47	30	13	31	121	...	...	...	...	...		



**Relations with other Departments, etc.**—As in previous years the closest co-operation has been maintained between the Tuberculosis Dispensary and the Voluntary Tuberculosis Care Council, the other Hospitals, Medical Services, and charitable organisations in the City.

**Sputum Examination.**—Every effort is made to verify each notified case by bacteriological means, and during the year 1,189 specimens of sputum were examined at the Dispensary. Of this number, 271 were found to contain tubercle bacilli, while 918 gave negative results. In addition 534 samples of sputum were sent, for examination, to the University of Durham Bacteriological Laboratory by the medical practitioners of the City. Of these 78 proved positive, and 456 negative.

**Work of the Nurses.**—761 new patients were seen, as against 854 in 1932, and 10,173 subsequent visits were made, giving a grand total of 10,934 for the year. The number of patients on the nurses' lists on December 31st, 1933, was 1,713, comprising 776 males, 521 females, and 416 children.

In 705 cases tubercle bacilli had been found in the sputum, and special attention has always been paid to these infective cases. They are visited at least once monthly, and their contacts are kept under the closest possible supervision.

During the year, the names of 1,225 patients were removed from the nurses' lists ; this total includes 245 deaths (182 sputum positive and 63 negative). Visits to 980 patients were discontinued on the instruction of the Tuberculosis Medical Officer ; of these only 42 were sputum positive cases (31 of whom had left the district), while 938 were negatives. In 889 of the negative cases the names were removed because there was no evidence of active tuberculosis, while 49 had left the district.

**The Work of the Sanitary Inspector.**—This officer disinfects houses after deaths, or changes of address, of persons suffering from pulmonary tuberculosis, arranges for the removal and disinfection of patients' clothing and bedding, and reports on any insanitary conditions existing in the homes of dispensary patients, such as overcrowding, insufficient ventilation, or defective sanitary arrangements.

#### INSTITUTIONAL TREATMENT.

Approximately 70 beds were provided at Barrasford Sanatorium for early or moderately advanced cases of pulmonary tuberculosis from Newcastle ; 136 beds were available for more advanced or emergency cases at the Sanatorium Pavilions at the



City Hospital, Walker Gate, 60 at the Newcastle General Hospital for the treatment of non-pulmonary tuberculosis, while at Stannington Sanatorium (a private institution) 30 beds were maintained for the treatment of tuberculous children.

**Barrasford Sanatorium.**—The following particulars refer only to Newcastle patients. The report of the Medical Superintendent of Barrasford Sanatorium will be found under a separate heading, and contains the complete statistics for that Institution.

110 patients (69 men and 41 women) were admitted in the course of the year, and were classified at the Dispensary in the following categories, in accordance with the classification in Memo. 37/T. : G.1 +, 1 ; G.2 +, 50 ; G.3 +, 26 ; T.B. Minus, 30. (In the latter category 13 were pleurisy with effusion). 3 were sent for the purpose of observation.

Details of the admissions and discharges are given in the following table :—

PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM  
DURING THE YEAR 1933.

	Sex.	In Barrasford Sanat'm on 1st January, 1933.	Admitted during the Year.	Dis- charged during the * Year.	In Barrasford Sanat'm on 31st December, 1933.
Patients .....	M.	37	66	66	37
Do. ....	F.	19	41	43	17
Observation Cases .....	M.	1	3	4	...
Do. ....	F.	1	...	1	...
TOTALS .....		58	110	114	54

1 patient was re-admitted and is counted as 2 admissions.

Of the 5 patients discharged who had been under observation, 3 were found to be suffering from tuberculosis.

The results of treatment in the institution were satisfactory, and the condition of the patients on discharge was as follows :—

RESULTS.	Males.	Females.	TOTAL.
Quiescent .....	14	6	20
Improved .....	45	28	73
Without Improvement .....	11	10	21
TOTALS .....	70	44	114



The total number of days of those who received treatment was 22,151, giving an average length of stay of 194 days.

Discharged patients are visited at frequent intervals by the Dispensary staff and are encouraged to report periodically so that they can be examined and records kept.

### STANNINGTON SANATORIUM.

The 30 beds were kept fully occupied throughout the year, and 47 patients completed treatment.

The details appear below :—

CHILDREN WHO RECEIVED TREATMENT IN STANNINGTON SANATORIUM  
DURING YEAR 1933.

	In Sana- torium on 1st Jan., 1933.	Ad- mitted during the Year.	Persons who completed Treatment during the year.			In Sana- torium on 31st Dec., 1933.
			Number	Total Number of Days.	Average length of stay in Days.	
Males.....	14	23	23	4,565	198	14
Females .....	16	24	24	5,185	216	16
TOTALS .....	30	47	47	9,750	207	30

In nearly every case great benefit accrued to the patient, as is shown in the following return :—

	Males.	Females.	Total.
Disease quiescent .....	10	7	17
Improved .....	12	14	26
Without Improvement .....	1	3	4
TOTALS .....	23	24	47

### SANATORIUM PAVILIONS, WALKER GATE.

446 patients were admitted (256 males and 190 females), and included 41 transferred from Newcastle General Hospital who were found to be suffering from pulmonary tuberculosis.



Details of the number of patients admitted and discharged are given in the accompanying table :—

PATIENTS WHO RECEIVED TREATMENT IN THE SANATORIUM PAVILIONS,  
WALKER GATE, DURING THE YEAR 1933.

		Sex.	In Institu- tion on 1st January, 1933.	Ad- mitted during the Year.	Dis- charged during the Year.	Died in Institu- tion during the Year.	In Institu- tion on 31st Dec., 1933.
Number of Patients.	Adults ....	M.	58	202	156	53	51
	Do. ...	F.	29	135	111	25	28
	Children...	M.	8	6	7	4	3
	Do. ...	F.	3	14	13	3	1
Observation Cases.	Adults ....	M.	13	40	42	5	6
	Do. ...	F.	5	26	20	3	8
	Children...	M.	2	8	8	2	...
	Do. ...	F.	1	15	14	1	1
TOTALS.....	...	...	119	446	371	96	98

N.B.—33 patients were re-admitted and are counted as 66 admissions.

3 patients were re-admitted twice, and are counted as 9 admissions.

Of the 95 patients discharged who had been under observation, 45 were found to be suffering from tuberculosis. The total number of days of those who received treatment was 48,842, giving an average length of stay of 105 days.

96 patients died in the institution ; the condition of the other patients on discharge is given in the table below :—

	Males.	Females.	Total.
Improved .....	180	119	299
Without Improvement .....	33	39	72
Died in Hospital.....	64	32	96
TOTALS .....	277	190	467

Many of those discharged “improved” were fit for light work ; 24 were transferred to Barrasford Sanatorium and 1 to Stannington Sanatorium. 15 patients were sent to the Newcastle General Hospital for special treatment.

Treatment has been on Sanatorium lines, modified to some extent in view of the type of patient ; the essentials are the



same, however, namely, rest and good food under satisfactory hygienic conditions, with exercise graduated to the patient's tolerance.

**Artificial Pneumothorax.**—There were 39 initial inductions of artificial pneumothorax and 967 refills performed at Walker Gate Sanatorium during the year. Since the year 1922, 277 patients have received this form of treatment at Walker Gate Sanatorium.

### NEWCASTLE GENERAL HOSPITAL.

124 patients were admitted (75 males and 49 females). Details are given in the following table :—

PATIENTS SUFFERING FROM NON-PULMONARY TUBERCULOSIS WHO RECEIVED TREATMENT IN NEWCASTLE GENERAL HOSPITAL DURING THE YEAR 1933.

	Sex.	In Institu- tion on 1st Jan., 1933.	Ad- mitted.	Dis- charged.	Died in Institu- tion.	In Institu- tion on 31st Dec., 1933.
Adults.....	M.	16	58	40	8	26
Do. ....	F.	11	25	20	4	12
Children .....	M.	16	17	11	6	16
Do. ....	F.	9	24	8	9	16
TOTALS .....		52	124	79	27	70

The results of the treatment received are given in the table below :—

	Males.	Females.	Children.	Totals.
Improved.....	39	17	14	70
Without Improvement.....	1	3	5	9
Died in Hospital.....	8	4	15	27
TOTALS.....	48	24	34	106

The total number of days of those who received treatment was 18,236 giving an average length of stay of 172 days.

**X-Ray Examinations.**—During the year the following thoracic examinations were carried out, viz., 1,034 films and 2,587 screen examinations at the City Hospital, Walker Gate, and 281 films at the Newcastle General Hospital. Those at Walker Gate



Hospital include patients screened as a routine, especially during artificial pneumothorax treatment, and before discharge from hospital.

**Deaths in Institutions.**—170 of the deaths from tuberculosis (122 “lungs” and 48 “other forms”) occurred in institutions. 100 patients (94 “lungs” and 6 “other forms”) died in the Sanatorium Pavilions, Walker Gate, and the City Hospital for Infectious Diseases, 43 patients (18 “lungs” and 25 “other forms”) in Newcastle General Hospital, 10 patients (1 “lungs” and 9 “other forms”) in the Royal Victoria Infirmary, 10 patients (3 “lungs,” 7 “other forms”) in the Fleming Memorial Hospital, and 7 patients in other institutions.

GEORGE HURRELL, M.D., D.P.H.,

*Tuberculosis Medical Officer.*



## BARRASFORD SANATORIUM.

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### Report of the Medical Superintendent.

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TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I beg to submit a report on the work at Barrasford Sanatorium during the year 1933.

**Accommodation.**—So far as the Institution as a whole is concerned, the most important feature of the year was the opening of the Nurses' Hostel. On September 15th, Alderman David Adams presiding, the Hostel was declared open by Councillor James Pearson in the presence of a large and distinguished company.

The new building is situated to the S.E. of the Sanatorium and commands fine views of the South and South-west. The outside walls are composed of brick; the internal walls and floors of tiles reinforced with steel—the whole being fire resisting. It is a rectangular building of pleasing proportions with three floors. The two upper comprise 36 bedrooms and the appropriate bathing, washing and w.c. accommodation. On the ground floor are cloak rooms, four sitting rooms, kitchen and stores. The sitting rooms are provided with wireless and supplied from the main set in the Sanatorium. The heating and domestic hot water plants are served by oil fuel. The system is thermostatically controlled, the burners being extinguished as soon as a predetermined temperature is reached, and relit on the temperature falling. This system needs supervision only, and there is no work in the way of carting coke to the plant and disposing of ashes afterwards, as would have been the case had coke furnaces been installed. Each member of the female staff has a separate and suitably furnished bedroom, together with adequate means for



personal hygiene, whilst off-duty time can be spent according to individual taste in comfortable, well lit recreation rooms. There remains the laying out of the ground around the building, and the provision of a hard tennis court. It is hoped that these will be completed during 1934. The increased comfort, whilst no more than their due, must have resulted in increased happiness and health of the staff, and on looking back at the old conditions it appears surprising that the morale of the staff was as good as it was. The staff's sincere thanks are due to the Council as a whole, and to the members of the Health Committee in particular, for the provision of this great addition to their welfare.

The vacating of rooms by staff has relieved the congestion that existed previously, and there is now adequate accommodation available for an assistant Medical Officer if it be decided to appoint one. Additional rooms are also released for patients, and the capacity of the Sanatorium is now increased by seven rooms. Of lesser importance, but of great convenience, is the provision of space for increased stores, a mattress room, box room and a suitable sewing room, from rooms previously occupied by domestic staff, but so placed as to be undesirable for patients' use. One other room has been retained in the upper part of the east wing where it is proposed to instal additional bathing accommodation for female patients. This is very necessary as in this part of the Sanatorium there is only one bath for the use of 24 patients.

**Electrical Energy.**—The electric storage battery became seriously defective during the year. As the cost of renewal was considerable, and over a period of years, recurrent, it was decided to cease generating electricity at the Sanatorium and obtain it from an outside source. At the same time as the change over from the previous 110 volts direct current to the new 250 volts alternating current was in process, the whole Institution was rewired. This was necessary because a test showed that the insulation of the wiring, which was the original of 1907, was unsatisfactory, and unsafe in that much of it was enclosed in wooden casing. The new wiring is all enclosed in screw jointed steel tubing which is adequately earthed. There are very great advantages in being supplied with current of standard pressure, and the new arrangement has so far been efficient.



**X-Ray Plant.**—This apparatus has given constant service since it was purchased in 1923. It was pointed out in the report for the year 1932 that its efficiency was falling off, and latterly the results obtained leave much to be desired. Designed for the small voltage available before the change over, it has only been possible to cut down the new higher voltage current to suit the set. Moreover, to safeguard the apparatus, the new supply has been kept to the lowest pressure that calculation suggested it could accept. The low voltage coupled with wear and tear of nearly eleven years constant usage, has affected the results to a serious degree. The X-rays produced are of very low penetrative quality, and the result is considerably longer exposure time to produce a radiograph, and the excessive showing up on the films, because of the low penetration of the rays, of normal structures. The combined effect is films of poor quality from which it is difficult to distinguish normal appearances from those of disease. The X-ray plant is therefore no longer up to standard, and in view of the very great importance that X-ray examinations have in the diagnosis and treatment of chest conditions, it seems clear that the question of the provision of a new apparatus should be considered.

During the year a radiograph was taken of the chest of every case admitted to the Institution. The examination of any case of chest trouble cannot be regarded as complete without an X-ray examination. The comparison of films taken at the beginning and end of an adequate period of treatment, is probably the most valuable guide as to the progress of a case of lung tuberculosis. Artificial pneumothorax treatment, or treatment by lung collapse, demands frequent screening (examination of chest by X-rays but without the taking of a film), and during the year every refill to maintain lung collapse has been controlled by radiological appearances. It is seen that X-rays are essential (*a*) in the diagnosis of chest conditions, (*b*) in the estimation of progress in the local condition, and (*c*) in the control of treatment by what may be regarded as the most important of all treatment, namely lung collapse.

During the year 194 films were completed and the interpretation entered up in the patients' notes. The "screenings" numbered 727, and the appearances were reproduced in the patients' records by a diagram.

**Water.**—Despite the low rainfall during the year, the bore hole sunk in 1930 continued to produce water to meet all needs.



**Dental Clinic.**—The deplorable dental condition of a large proportion of the patients on admission, is corrected as far as possible. It is not possible to put every patient's teeth into first class order, but an endeavour is made to treat all patients whose teeth are in such a state as to be a likely cause of ill health.

Clinics, under the supervision of Mr. G. Hutchinson, L.D.S., were held every fortnight, and the following work was completed :—

Extractions .....	320
Fillings .....	75
Temporary fillings.....	7
Scalings .....	23
Dressings .....	5
Attentions to dentures .....	12
Examinations .....	11

The total number of attendances was 350.

**Occupational Therapy.**—The employment of patients has continued to be one of the mainstays of sanatorium routine. Suitable occupation is offered to most patients sooner or later during their progress through the institution. It is equally a change to those patients who have completed the long walks repeatedly, as to those who are only able to do very short walks (for one of many reasons), to be able to use their brains and hands at some constructive work which is designed to be within their physical powers. It is certain that the establishment of occupational therapy is an important factor in deciding patients to continue treatment longer than they otherwise would have done.

Occupational therapy at Barrasford consists of two main types—handicrafts, and woodwork combined with the suitable sorts of estate work. The former is housed in suitable workshops, adequately heated and lit, and are under the charge of a full time handicrafts instructor (Mr. J. A. Caughey). Here the crafts include leather work, raffia and cane work, rug and basket making, lamp shades, and others to a less extent to suit personal needs. There is little loss on the cost of materials, as the standard of the finished work is sufficiently good to secure a sale of a very large proportion of the articles made. The attendances numbered 6,137; the women worked 5,812 hours, and the men 6,462. The receipts from sales amounted to £126 during the year.



The woodworking section is placed in a specially built workshop, well heated and ventilated. The section is under the control of the joiner (Mr. F. C. Gerdes). Here only men are employed, and it seems a distinct advantage that patients who earn their livings, when well, by the use of tools, can keep themselves to a considerable degree in practice and be better fitted therefore to return to work on discharge than they otherwise would be. In this department wooden stools are made, which are subsequently finished off in the handicrafts shops. Here, too, the numerous smaller requirements in woodwork for the institution are carried out, and the men are able to help in the repairs and improvements about the estate. In addition, men patients are able to assist the gardener (Mr. J. Henderson) in the grounds which are now commencing to be developed.

**Admissions.**—Cases with disease limited to a small area of the lungs continue to be comparative rarities. Most of the patients showed evidence of moderately extensive disease, though in the majority the histories of illness were not unduly long.

The total number of cases admitted to the Sanatorium during 1933 was 159, 9 less than in the previous year. The number of Newcastle admissions was 110, as against 126 in 1932. Gateshead Corporation had 27, Tynemouth Corporation had 3, and West Hartlepool had 10. The admissions from the County Borough of West Hartlepool show a large falling off in the year under review when there were 10, and in 1932 when there were 9, as compared with 36 admissions in 1931 and 25 in 1930.

Of the 159 admitted cases, 18 had been in the Sanatorium previously and were disposed as follows :—

1	case	had	been	admitted	3	times	previously	...in	1926, 1928 and 1932
1	„	„	„	twice	„	„	„	.....in	1919 and 1927
1	„	„	„	„	„	„	„	.....in	1929 and 1930
1	of	the	re-admitted	cases	was	first	admitted	in	..... 1912
1	„	„	„	„	„	„	„	.....	1918
1	„	„	„	„	„	„	„	.....	1921
1	„	„	„	„	„	„	„	.....	1925
1	„	„	„	„	„	„	„	.....	1926
1	„	„	„	„	„	„	„	.....	1928
3	„	„	„	were	„	„	„	.....	1930
2	„	„	„	„	„	„	„	.....	1931
4	„	„	„	„	„	„	„	.....	1932

Of these 18 re-admitted cases, 17 had had at some time or other tubercle bacilli demonstrated in the sputum, and in 1 case tubercle bacilli had never been seen.



## ADMISSIONS TO THE SANATORIUM DURING 1933.

Authority.	Male.	Female.	Total.
*Newcastle Corporation .....	69	41	110
Gateshead Corporation .....	27	...	27
Tynemouth Corporation .....	1	2	3
West Hartlepool Corporation.....	7	3	10
South Shields Corporation.....	...	1	1
Private .....	4	3	7
Tynemouth Public Assistance Committee.....	...	1	1
	108	51	159
During 1932.....	114	54	168
During 1931.....	125	60	185
During 1930.....	121	65	186
During 1929.....	124	54	178

\* One case was admitted twice during the year, and is counted as two admissions.

NOTE.—Figures relating to the years 1921–1928 are given in the Report for the year 1932.

**Discharges.**—There were 165 discharges during 1933 as compared with 171 in 1932. No case died in the Sanatorium during the year. There was one summary dismissal during the year, and the total of these is only 7 since 1921 when the Corporation acquired the Sanatorium.

## DISCHARGES FROM THE SANATORIUM DURING 1933.

Authority.	Male.	Female.	Total.
Newcastle Corporation .....	70	44	114
Gateshead Corporation .....	27	...	27
Tynemouth Corporation .....	1	2	3
West Hartlepool Corporation.....	8	5	13
South Shields Corporation.....	...	2	2
Private .....	2	3	5
Tynemouth Public Assistance Committee.....	...	1	1
	108	57	165
During 1932.....	111	60	171
During 1931.....	124	60	184
During 1930.....	131	59	190
During 1929.....	115	54	169

NOTE.—Figures relating to the years 1921–1928 are given in the Report for the year 1932.



## SUMMARY OF MOVEMENTS OF PATIENTS DURING 1933.

Authority.	In residence night of Dec. 31st, 1932.	Admitted during 1933.	Discharged during 1933.	In residence night of Dec. 31st, 1933.
Newcastle Corporation .....	58	110	114	54
Gateshead Corporation .....	10	27	27	10
Tynemouth Corporation .....	2	3	3	2
West Hartlepool Corporation ...	5	10	13	2
South Shields Corporation .....	1	1	2	...
Private.....	1	7	5	3
Tynemouth Public Assistance Committee .....	...	1	1	...
	77	159	165	71

## Details in connection with Discharged Cases.

The particulars of patients, and the results of their treatment, which are set out later, are based on the completed cases discharged. Of these 165, 11 exhibited no definite signs or symptoms of clinical tuberculosis, and were discharged as soon as this fact was established, and are excluded from the particulars and results of treatment which follow. These details are, therefore, based on the 154 cases of definite tuberculosis.

## (a) Length of stay—

The average duration of treatment of all cases was 179·4 days.

Excluding the 11 non-tuberculous cases, 178·1 days.

The 111 Newcastle cases alone averaged 197·5 days.

The longest stay was 588 days, the shortest 4 days.

## (b) Beds occupied and patient days—

Average number of beds occupied, 81·6. 52·5 by males, and 29·1 by females.

Total number of patient days was 29,799. 19,175 male, and 10,624 female.

Below is given an analysis of the average number of beds occupied, and the number of patient days.

Authority.	Average Beds occupied daily.	Patient Days.
Newcastle Corporation .....	61·47	22,439
Gateshead Corporation .....	9·97	3,641
Tynemouth Corporation .....	2·11	771
West Hartlepool Corporation .....	5·76	2,105
South Shields Corporation.....	0·87	319
Private .....	1·39	509
Tynemouth P.A.C. ....	0·041	15



*(c) Social Status—*

	Male.	Female.	Total.
Single .....	44	41	85
Married.....	53	11	64
Widowers .....	3	...	3
Widows .....	...	2	2
TOTAL .....	100	54	154

*(d) Age—*

Years.	Male.	Female.	Total.
16—20 .....	15	14	29
20—25 .....	18	14	32
25—30 .....	17	12	29
30—35 .....	19	6	25
35—40 .....	13	3	16
40—45 .....	8	2	10
45—50 .....	4	3	7
50—55 .....	3	...	3
55—60 .....	3	...	3
TOTAL .....	100	54	154

*(e) Occupations of 100 Male Patients—*

Engineering and Metal Workers.....	12
Labourers.....	12
Dock Labourers .....	2
Clerks.....	8
Motor Drivers and Mechanics.....	5
Joiners .....	4
Miners .....	3
Warehousemen .....	3
Butchers .....	3
Commercial Travellers .....	2
Barmen .....	2
Machinists .....	2
Message Boys .....	2
Railway Workers—Outside .....	2
Railway Workers—Inside.....	1

and one each of the following :—relieving officer, post office worker, bookbinder, newsagent, plumber, nail maker, fishmonger and poultry dealer, chauffeur, optician, french polisher, salesman, storekeeper, draughtsman, blacksmith, contractor's foreman, metal pipelayer, printer, night watchman, driver of concrete



mixer, seaman, Clerk in Holy Orders, shop assistant, lamp attendant, waiter, painter and paperhanger, policeman, ex-soldier, coremaker, grocer, farmer, work's chemist, upholsterer, bus conductor, schoolboy, furnaceman, and one had no occupation. Total 100.

*(f) Occupations of 54 Female Patients—*

Housewives .....	11
Nurses .....	7
Clerks .....	6
Domestic Workers at home.....	6
Domestic Servants.....	5
Shop Assistants .....	3
Machinists .....	2

and one each of the following :—bakeress, dressmaker, laundress, tobacco spinner, bottler in brewery, club stewardess, cardboard box maker, hairdresser, cook, tea packer, caretaker, waitress, french polisher, warehouse assistant. Total 54.

In connection with the Social Status section (“*c*” above), the consorts of both the widows died of pulmonary tuberculosis, one in 1927 and the other in 1932 ; and one of the consorts of the three widowers succumbed to the disease ; she died in 1933, shortly before the patient was admitted. The remaining two died after childbirth, but it was not established that pulmonary tuberculosis was the cause.

In relation to section “*f*” above, a disquieting feature is the comparatively large proportion of sick nurses. Of the 54 discharged female patients definitely suffering from pulmonary tuberculosis, 7 were engaged in the nursing profession when they broke down in health—that is more than 12 per cent. In addition, one other female patient discharged, a re-admission, had broken down in health whilst engaged in nursing duties ; 5 of the 7 showed the presence of tubercle bacilli in the sputum and a moderately extensive lesion, and 2 had evidence of an apical lesion characteristic of lung tubercle but without bacilli. These patients came from four different areas and therefore no one set of circumstances can be considered as responsible for the causation of the disease ; 5 of them were engaged in general nursing and had not worked amongst the tuberculous sick, whilst the other 2 had been in contact with advanced cases, one for only two months before she broke down, and the other for a much longer period.



The problem of tuberculosis amongst nurses is gradually being forced upon the attention of tuberculous workers in this country, as it is in Canada and America. It is not a topic for discussion in an annual report, but the high incidence rate is worthy of note. The conditions under which nurses work are much improved in recent years, and the evidence is not clear that sick nurses who develop pulmonary tuberculosis are subjected to massed infection. A more likely cause is that elaborated by the writer in 1930 when it was pointed out that young adults at the present time give themselves very little rest. When not engaged at their occupations, their remaining hours daily are spent in more or less strenuous amusements or study, or both. These all require energy and concentration, with the result that a state of fatigue is produced which allows the attack of tuberculosis to triumph when otherwise it would be successfully resisted. This state of stress is one of the factors in the problem of the young adult type of pulmonary tuberculosis.

### Diagnosis.

The diagnosis of pulmonary tuberculosis was confirmed bacteriologically either before admission or during residence in 111 cases, 71 males and 40 females. 39 patients (30 males and 9 females) were apparently without tubercle bacilli in the sputum, and 6 females said they had no expectoration; making 45 cases of tuberculosis in whose sputa tubercle bacilli had never been demonstrated. The clinical findings in all sputum negative cases can be divided as follows:—

Not suffering from clinical tuberculosis.....	11
Definite pleural tuberculosis without evidence of lung tuberculosis .....	22
Definite physical signs and X-ray evidence of lung tuberculosis without demonstrable bacilli .....	23

In the cases of the 23 patients in the last group, the radiographs all showed appearances suggesting the presence of deposit in the pulmonary situation for which tuberculosis shows a predilection. 159 sputum examinations were made in connection with these 23 cases, and as 9 had no sputum the average examinations in those that had was 11 each. 893 sputum examinations were made at the Sanatorium during the year; of these 311 were positive as regards the presence of tubercle bacilli, and 582 were negative. 887 complete examinations of the chest were made during the year, together with routine examinations of the larynx and urine on admission of the patient, and subsequently when necessary.



During the year 11 cases were discharged as not suffering from pulmonary tuberculosis, and the diagnoses in these cases were as follows :—

Bronchitis.....	1
Bronchitis and emphysema.....	1
Bronchiectasis .....	4
Sub-acute infective endocarditis.....	1
Post-influenzal pulmonary infiltration (basal) .....	1
No pathological condition detected.....	3

These 11 non-tuberculous cases were included in the 15 patients sent for observation for the purpose of making a diagnosis. Four were found to be suffering from pleural tuberculosis.

The period of observation for the purpose of diagnosis is set out below :—

	Under 1 week.		1 to 2 weeks.		2 to 4 weeks.		More than 4 weeks.	
	M.	F.	M.	F.	M.	F.	M.	F.
Tuberculous .....	2	1	...	...	1	...	...	...
Non-tuberculous .....	...	...	2	3	3	...	3	...
Doubtful .....	...	...	...	...	...	...	...	...

In connection with diagnosis, lipiodol was used in five cases. The material was introduced by the inter-crico-thyroid route in the usual manner in this country. In one of these cases no abnormal appearances were displayed, but in the other four the characteristic shadows associated with bronchiectasis made the diagnosis definite.

### Treatment.

Rest continues to be regarded as the most important principle in treatment, the other chief points being diet and occupation—the latter requiring the proviso that the patient has a normally ranging temperature. A raised bodily temperature is a distinct call for rest in bed and this is insisted upon.

70 of the 154 definite cases of tuberculosis were found to have normal temperatures during the whole of their residence, while 84 patients were feverish at some time or other of their



treatment in the Sanatorium, spending amongst them 4,936 days in bed.

Afebrile throughout Treatment.	Febrile on Admission, Afebrile on Discharge.	Febrile Intermittently.	Febrile throughout Treatment.	Afebrile on Admission, Febrile on Discharge.
70	43	22	17	2

Lung collapse or artificial pneumothorax is the most widely used of the special forms of treatment. It is also by far the most valuable.

The rest provided by successful lung collapse allows stable healing to occur if the treatment is kept up sufficiently long. Further, cough and sputum are materially diminished if not abolished.

53 of the 1933 discharged cases were considered to be suitable for treatment by lung collapse, but in 18 of them changes in the chest in the course of the disease on the chosen side, prevented the treatment from being carried out.

Of the 35 discharged cases treated, 18 were right sided and 16 were left, and in one case both lungs were partially collapsed simultaneously.

In addition to these, 6 cases had had an artificial pneumothorax induced before admission, bringing the number treated during the year to 41 (21 right, 19 left and 1 bilateral). In 9 cases the treatment was ineffective and was abandoned after a fair trial. In the remaining 26 it was effective, that is to say symptoms were controlled and apparent health restored.

In the 6 cases where the artificial pneumothorax was induced before admission, the lung collapse was maintained and was effective in each case.

In connection with all the above cases, all of whom were discharged during the year, 638 insufflations of air were performed, whilst during the year the total number of such operations was 694.

On discharge the lung collapse is maintained by the Tuberculosis Medical Officer in most cases.

Since 1922, 354 cases have been treated by artificial pneumothorax at Barrasford, exclusive of those cases where lung collapse was induced before admission, which totalled 42.

*Phrenic Evulsion.*—Only one case was treated by this operation, to terminate artificial pneumothorax treatment.



*Sanocrysin*.—18 cases received treatment by the injection of this gold salt into a vein. In 12 cases it was abandoned on account of reactions which demand the termination of the use of the drug, and it was ineffective in 6 cases. It appears that, in a certain number of instances where the use of sanocrysin has to be discontinued on account of reactions before the full total of the drug has been employed, the reaction has been the starting point of definite and even sustained improvement in health; this is especially so after skin reactions.

Sanocrysin should be tried, in the absence of indications to the contrary, in most cases where other forms of treatment have failed.

*Ultra Violet Radiation*, though available, was not employed during the year, as no case requiring it was in residence.

### Results of Treatment.

As an indication of general improvement in health, the weight record of each patient is of importance, though it is of little value in the assessment of the permanence of any improvement. The best information as to healing or spread of disease is by way of X-ray films repeated at long intervals and under X-ray conditions that allow later films to be produced under the same conditions as the first. Unfortunately the existing X-ray plant does not allow these conditions, and the time required and the expense are also barriers.

The weight records of the 154 definite cases of tuberculosis of the lung or pleura, and those of the 11 non-tuberculous cases are as follows:—

		Gained up to 7 lbs.	Gained 7 to 14 lbs.	Gained over 14 lbs.	Remained station- ary.	Lost up to 7 lbs.	Lost over 7 lbs.	Not weighed on dis- charge.	Total.
154 definite cases.	Gained weight...	41	51	33	...	...	...	...	125
	Lost weight.....	...	...	...	...	18	5	...	23
	Stationary .....	...	...	...	6	...	...	...	6
	Not weighed on discharge .....	...	...	...	...	...	...	...	...
	Total .....	41	51	33	6	18	5	...	154
11 non- tuber- culous cases.	Gained weight...	4	4	...	...	...	...	...	8
	Lost weight.....	...	...	...	...	2	...	...	2
	Stationary .....	...	...	...	1	...	...	...	1
	Not weighed on discharge .....	...	...	...	...	...	...	...	...
	Total .....	4	4	...	1	2	...	...	11



The cases that promise permanent restoration to health are those of pleural tuberculosis without evidence of lung involvement, provided treatment is continued for a sufficiently long time to allow the central focus to be adequately encapsulated. None of the very many uncomplicated cases of pleural tuberculosis with effusion of fluid, that completed six months uninterrupted sanatorium treatment during the past 13 years, have been sent back to the institution so far. Had they developed lung tubercle subsequently, it is almost certain that they would have been re-admitted.

The majority of the pulmonary cases have improved in general health, and this is especially shown in the cases treated by lung collapse.

Under the classification of cases introduced by the Ministry of Health, patients suffering from pulmonary tuberculosis are divided into :—

Class T.B. Minus, or those cases in which tubercle bacilli have never been demonstrated in the sputum, and,

Class T.B. Plus, viz., cases in which tubercle bacilli have at any time been found.

The latter class is further divided into three groups :—

Group 1.—Cases with slight constitutional disturbance, if any, and in which the obvious physical signs are of very limited extent.

Group 3.—Cases with profound systemic disturbance or constitutional deterioration, with marked impairment of function, and with little or no prospect of recovery.

Group 2.—All cases which cannot be placed in Groups 1 or 3.

To indicate results of treatment, the following terms are laid down :—

“Quiescent.”—Cases which have no symptoms of tuberculosis and no signs of tuberculous disease, except such as are compatible with a completely healed lesion, and in which the sputum, if present, is free from tubercle bacilli.

“Arrested.”—In pulmonary cases the term should be applied only to cases which have been “quiescent” for a period of at least 2 years.

“Improved.”—Cases short of “quiescent,” in which the general health is fair and the symptoms of tuberculosis have materially diminished.

“No Material Improvement.”—All other patients who are alive.



When considered in these terms, the results of treatment of the 154 cases of lung or pleural tuberculosis can be set out as follows :—

T.B. Minus.			
	M.	F.	Total.
Quiescent .....	11	8	19
Improved .....	15	7	22
No material improvement...	4	...	4

T.B. Plus.			
	M.	F.	Total.
G.1 { Quiescent .....	...	...	...
{ Improved .....	...	1	1
{ No material improvement...	...	...	...
G.2 { Quiescent .....	...	...	...
{ Improved .....	52	27	79
{ No material improvement...	9	10	19
G.3 { Quiescent .....	...	...	...
{ Improved .....	3	...	3
{ No material improvement...	6	1	7

The number of T.B. minus cases which improved to the stage of quiescence is made up largely of cases of pleural tuberculosis which had no evidence of disease in the lung itself. There were 12 of such cases—the remaining 7 T.B. minus quiescent patients had definite X-ray evidence of limited disease with fibrosis.

I desire to record my appreciation of the spirit of co-operation shown by the Matron (Miss F. Baguley, A.R.R.C.) and the rest of the staff, both nursing and lay.

Yours faithfully,

CECIL G. R. GOODWIN, M.R.C.S., L.R.C.P.,

*Medical Superintendent.*

*Barrasford Sanatorium,*

*Northumberland,*

*March 13th, 1934.*







REPORT OF THE  
MEDICAL SUPERINTENDENT,  
NEWCASTLE GENERAL HOSPITAL.

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V.—GENERAL DISEASES  
HOME AND HOSPITAL.

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DOMICILIARY MEDICAL SERVICE.  
NEWCASTLE GENERAL HOSPITAL.







### DOMICILIARY MEDICAL SERVICE.

On the transfer of the Poor Law on 1st April, 1930, one of the matters delegated to the Health Committee by the City Council was the care of the sick poor. This work is carried on by District Medical Officers, each of whom is in charge of a specified district of the City, and in addition to giving attendance, supplies medicines. It is proposed, however, to gradually introduce a panel system, under which any poor person may have the choice of a doctor, while the Health Committee will be responsible for the provision and dispensing of medicines. A scheme on this basis, covering six of the districts which had temporary medical officers, was put into operation on the 8th November, 1933.

The following table gives particulars of the work of the District Medical Officers during 1933 :—

District No.	District Medical Officer.	Number of Cases Treated.	Attendances by the M.O. at the Homes of the Patients.	Attendances by the Patients at the M.O.'s Surgery.
1	*Dr. R. L. Bell	788	1,972	1,157
2	*Dr. J. MacRae	396	832	657
3	*Dr. J. B. Sinson	791	594	1,435
4	*Dr. J. MacRae	710	1,427	1,311
5	*Dr. E. P. Tulloh	1,051	656	2,669
6	* Do. do.	1,221	939	2,933
7	Dr. W. Simpson .....	1,611	2,892	1,273
8	Dr. R. W. Nevin .....	2,171	2,951	3,914
9	Dr. W. T. Hall .....	1,190	2,462	2,706
10	Dr. T. J. Ryan .....	1,196	2,950	4,500

\* Figures refer to period 1st January—7th November, 1933.



**NEWCASTLE GENERAL HOSPITAL.**

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

It affords me much pleasure to submit for your consideration this report on the year's work in the **Newcastle General Hospital**.

Again I have to report an increased activity in practically all departments of the Hospital, the doctors in the City continuing to make an ever increasing demand on its services. Very many expressions of satisfaction have been received from them on the expedition with which their patients are admitted and put under treatment. During the year, 605 letters have been sent to doctors informing them as regards their patients. This does not include those given to patients on their discharge to give to their Medical Attendants.

The Sunday Morning Lectures continue to be very much appreciated, and the attendance at these has risen.

The accommodation for the treatment of cases of non-pulmonary tuberculosis is still overtaxed, and there has been an increase in the number of pulmonary cases admitted, in most of these the diagnosis being made after admission. With the hearty co-operation of the Tuberculosis Medical Officer, however, these patients are admitted to the City Hospital without any undue loss of time.

The year's work in the Maternity Ward has again been a record one, 191 patients having been treated, against 158 in the previous year. The results have also been very good, the maternal mortality being about 0.5 per cent. The proportion of unmarried mothers was 17.2 per cent. The proposed alteration to the Labour Ward should facilitate the maternity work.

The number of patients admitted to the Mental Wards was a record one, viz. :—409 compared with 362 in the previous year, and of these, it was found necessary to certify 36.1 per cent., the remainder being discharged or transferred to Hospital or to some department in Elswick Grange.

The influenza epidemic, which commenced in 1932, continued during the early months of 1933, being responsible for an increase in the number of admissions, and also for a slight increase in sickness affecting the nursing staff,



Sporadic cases of dysentery continued to appear affecting both adults and children, but particularly the latter.

The cases of meningitis, including the cerebro-spinal variety, were exactly double those of the previous year.

The number of operations performed in the theatres was 1,560, an increase of 132 on the previous year, and does not include minor operations performed in the wards. I am pleased to be able to report that again the results obtained have been most excellent. An interesting development on the Surgical side has been the number of brain operations performed by Mr. Pattison. In addition to the benefit to the patient it has been of the greatest advantage to the position and standing of the Hospital. It has, however, brought into prominence a difficulty which I have long felt and experienced, namely the admission of patients, unable to pay, from districts outside the City. In my opinion it would be an advantage to all concerned if some arrangement were come to, with the neighbouring Local Authorities, whereby patients requiring special hospital treatment could be admitted as a matter of course, the Local Authority concerned being responsible for payment.

The appointment of two part-time anaesthetists has been a most beneficial one, and in the near future should be extended on account of the amount of work done in the theatres. Some other arrangement also as regards the nursing staff will have to be fixed, as at present the staffing of the theatre involves a depleting of the wards. Avertin is still being used very largely in operation cases, and would appear to be a safe, efficient, and from the patient's point of view, a pleasant anaesthetic.

Research work in raising the body temperature by means of high frequency waves has been going on in the Hospital for some time, and, although it is too soon to speak of results, very definite improvement has taken place in a number of patients suffering from general paralysis of the insane. The work is still going on and the results will be published in due course.

There is nothing outstanding to report as regards the treatment of children and infants. The number admitted was slightly lower than in the previous year. The present arrangement for the treatment of children is very unsatisfactory, and it is to be hoped that the plans for the building of a New Block will be carried out as expeditiously as possible. Although Louisville has



many disadvantages as a convalescent home for children, very full use was made of it during the year, 103 children having passed through, all without exception, having benefited by the sojourn in the country. There is no question about a Convalescent Home being a useful adjunct to a Children's Hospital.

The number of paying patients admitted for treatment continues to increase, as will be seen from the following returns for the last four years :—

1930, 67 ; 1931, 63 ; 1932, 105 ; 1933, 124.

If accommodation of a more private character were provided, at an increased rate of payment, I have no doubt that it would increase still more the number of patients desiring treatment.

Improvement of the lighting has been completed in both main blocks, except in C. Balcony. It has added very much to the appearance and convenience of the wards.

Three floors in the Old Block still remain to be relaid, but this is provided for, and when completed will provide eight excellent wards.

During the year it was necessary to admit 62 nurses to the sick wards for treatment, and of these, four were under treatment on two different occasions. As usual the most prevalent sickness was "Septic Throat," and again with a few exceptions occurred in probationers during the first six months of their training. Two nurses were operated on for appendicitis, and one had a serious attack of facial erysipelas, all making good recoveries. The outstanding illnesses were as follows :—

Influenza.....10.	Scarlet Fever..... 5.
Erysipelas .... 1.	Appendicitis ..... 2.
Septic Throat.....14.	

One of the porters was admitted to Hospital suffering from acute intestinal obstruction, due to an adhesive band, and, I regret to say, died.

In conclusion, I would take this opportunity of thanking you and your staff for their valuable co-operation, and also to place on record my appreciation of the work done, during a still difficult period, by the hospital staff.



ADMISSIONS AND DISCHARGES, ETC., FOR THE YEAR  
ENDED 31st DECEMBER, 1933.

	<i>Males.</i>	<i>Females.</i>	<i>Children.</i>	<i>Total.</i>
Admissions.....	1,927	1,963	886	4,776
Discharges .....	1,912	1,959	892	4,763
Of the Discharges—Cured .....			1,239	
Relieved .....			2,725	
Died .....			799	
			<hr/>	
		Total .....	4,763	<hr/> <hr/>

TABLE OF AGES OF PATIENTS TREATED.

Men over 60 .....	611
Women over 60 .....	417
Men under 60.....	1,298
Women under 60 .....	1,545
Boys, 3-16 .....	213
Girls, 3-16 .....	223
Children under 3 .....	456
	<hr/>
	4,763
	<hr/> <hr/>

TRANSFERS FROM OTHER HOSPITALS, HOMES AND UNIONS.

Royal Victoria Infirmary.....	15
Cottage Homes .....	9
Gateshead P.A.C. ....	10
Shotley Bridge Colony .....	2
South Shields .....	6
Prudhoe Hall Colony .....	4
Northumberland County Council.....	2
Gainford .....	1
Cumberland County Council.....	1
Durham County Council.....	20
Sheffield .....	1
Tynemouth .....	2
Barnsley Corporation.....	1
British Legion—Middlesbrough .....	1
Darlington P.A.C. ....	2
 Hospital deaths .....	 799
Elswick Grange deaths.....	13
PRIVATE CASES ADMITTED.....	124
INQUESTS HELD :—	
Hospital cases.....	33
Elswick Grange cases.....	6



## OPERATIONS.

FOR YEAR ENDED 31st DECEMBER, 1933.

Hernia (varieties) .....	113	Astragalectomy .....	2
Gastroenterostomy .....	20	Steinler's Operation—Bunion....	9
Gastrostomy .....	3	Fractures plated .....	5
Gastroplasty .....	1	Fractures reduced and P.O.P....	7
Gastrectomy .....	2	Osteotomy .....	1
Appendicectomy .....	158	Dupuytren's contraction .....	1
Laparotomy .....	45	Amputations .....	26
Anastomosis .....	1	Ankylosed joints .....	3
Colostomy .....	14	Excision joints .....	1
Cholecystectomy.....	27	Plastic Operation—Nose .....	6
Cholecystostomy.....	6	Sub-mucous resection .....	7
Hysterectomy (Abdominal) .....	1	Resection of Rib.....	34
„ (Vaginal) .....	3	Cystoscopy .....	57
Ventral fixation.....	2	Strictures dilated .....	49
Nephrectomy .....	1	Sigmoidoscopy .....	3
Thyroidectomy .....	3	Cæsarean Section .....	4
Salpingo-oophorectomy.....	16	Mastoidectomy.....	3
„ „ (Ectopic) .....	1	Fissure-in-ano.....	12
Prostatectomy .....	6	Ischio rectal abscess.....	19
Supra-pubic cystostomy .....	42	Incisions (various).....	186
Orchidectomy.....	2	Excisions (glands, etc.).....	11
Bubonocoele .....	2	Foreign bodies removed.....	3
Hydrocele .....	12	Blood transfusions.....	3
Spermatocele .....	2	Transplantation ureters .....	1
Varicocele .....	2	Kraske's Operation.....	1
Urethral caruncle .....	3	Intussusception .....	1
Hæmorrhoids .....	66	Ventriculograms.....	19
Meniscotomy .....	13	Halstead Operation .....	1
Curettage .....	112	External urethrotomy .....	5
Colpoperineorrhaphy.....	9	Internal „ .....	2
Circumcision .....	9	Prepatella Bursae .....	7
Tenotomy .....	4	Re-sutures .....	8
Carbuncle.....	6	Examinations.....	13
T.B. Glands, etc. ....	27	Abnormal Maternity.....	3
Tonsils and Adenoids.....	43	Skin grafts.....	5
Rodent Ulcer.....	2	Brain tumours .....	26
Sequestrectomy .....	15	Teeth extractions .....	163
Total, Major and Minor, performed in theatre .....		1,503	
Cases of teeth extraction under local anaesthetic not included .....		57	
		TOTAL.....	1,560

## RETURN OF CASES TREATED IN MASSAGE DEPARTMENT.

	<i>Massage.</i>	<i>Medical Electricity.</i>	<i>Sunlight.</i>
Treatments .....	1,744	813	974
Massage Department closed all July and part November.			

## X-RAY DEPARTMENT.

Cases X-rayed.....	1,281	Exposures .....	2,297
„ „ from T.B. Dispensary .....	283	„ .....	283
„ „ Babies' Hospital.....	23	„ .....	27
Total Cases X-rayed..	1,587	Total Exposures ....	2,607



## RETURN OF MENTAL CASES, 1933.

	<i>Men.</i>	<i>Women.</i>	<i>Total.</i>
Under treatment, January 1st, 1933.....	6	5	11
Admitted during 1933 .....	193	205	398
	<u>199</u>	<u>210</u>	<u>409</u>
Discharged during 1933 :—			
Cured .....	26	21	47
Improved .....	30	39	69
I.S.Q. ....	10	7	17
Transferred to :—			
Mental Hospital .....	70	78	148
General Hospital .....	37	42	79
A. and I. Wards .....	2	6	8
House (Able-bodied) .....	3	5	8
,, (Chronic) .....	10	6	16
Dead .....	5	2	7
Under treatment December 31st, 1933 .....	6	4	10
	<u>199</u>	<u>210</u>	<u>409</u>

## PATHOLOGICAL LABORATORY.

Total number of reports issued.....	2,234
Total number of Specimens analysed.....	2,768

*Comprising—*

Sputum examinations .....	405
Fæces examinations .....	163
Blood Sugar estimations.....	193
Blood Urea estimations.....	109
Blood Cell counts (including films and reticulocyte counts)... ..	212
Gastric Contents analysis.....	291
G.C. Smears examined.....	190
Pleural Fluids and Pus examined .....	104
Cerebro-spinal Fluid examinations .....	99
General Urinary examinations.....	1,002
	<u>2,768</u>

## ADULTS.—CLASSIFIED LIST OF DISEASES TREATED.

## MEDICAL.

## RESPIRATORY.

Bronchitis .....	208	Infarction.....	1
Asthma .....	41	Neoplasm of Lung.....	1
Pleurisy .....	43	Gangrene of Lung.....	1
Bronchiectasis .....	8	Broncho pneumonia .....	30
Bronchitis and Emphysema.....	17	Lobar pneumonia .....	55
Pyo pneumothorax .....	4	Hypostatic pneumonia.....	5
Pulmonary Œdema.....	2	Others .....	11

## DIGESTIVE.

Gastritis.....	26	Dyspepsia .....	15
Gastric Ulcer .....	28	Intestinal Colic .....	5
Constipation .....	23	Gastro-Enteritis .....	22
Duodenal Ulcer .....	22	Cirrhosis of Liver .....	5
Colitis .....	5	Others .....	20



## NERVOUS.

Cerebral Hæmorrhage.....	82	Paralysis Agitans.....	6
Cerebral Thrombosis.....	32	Neuritis .....	6
Functional .....	26	Neurasthenia .....	63
Disseminated Sclerosis .....	7	General Paralysis .....	9
Paraplegia .....	3	Mental .....	42
Epilepsy .....	47	Others .....	27
Locomotor Ataxy .....	26	Neuralgia .....	9
Peripheral Neuritis .....	3	Brain Tumours .....	26

## DEFICIENCY DISEASE.

Scurvy .....	1
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## INFECTIOUS DISEASES.

Encephalitis Lethargica .....	16	Meningitis—Septic.....	1
Influenza.....	44	Paratyphoid .....	1
Erysipelas .....	7	Cerebro-Spinal Meningitis.....	6
Dysentery .....	3	Malaria .....	1

## CIRCULATORY.

Valvular disease of Heart.....	98	Angina Pectoris.....	2
Myocarditis.....	129	Aneurism .....	7
Pericarditis .....	2	Pernicious Anæmia .....	15
Arterio-sclerosis .....	40	Leukæmia .....	5
Acute Endocarditis.....	11	Secondary Anæmia .....	16
Hyperpyæsia .....	5	Others .....	7

## RHEUMATIC.

Acute Rheumatism .....	43	Sciatica .....	5
Chronic Rheumatism.....	16	Osteo-Arthritis .....	4
Rheumatoid Arthritis .....	30	Chorea .....	8
Lumbago.....	10	Others .....	1

## EXCRETORY.

Acute Nephritis.....	12	Uræmia .....	11
Chronic Nephritis .....	47	Cystitis .....	10
Pyelitis .....	34	Others .....	2

## INTERNAL SECRETORY.

Myxœdema .....	6	Diabetes Mellitus .....	34
Goitre .....	1	Others .....	1

## FOR OBSERVATION.

Debility .....	35	Senility .....	21
Cases for Observation .....	16		

## TUBERCULOSIS.

Pulmonary ....	53	Non-Pulmonary .....	63
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**ADULTS.—CLASSIFIED LIST OF DISEASES TREATED.****SURGICAL.**

Carcinoma .....	168	Other Diseases Male Organs.....	7
Rodent Ulcer.....	2	Pyæmia .....	1
Sarcoma .....	5	Septic conditions .....	37
Hernia .....	108	Ulcers .....	18
Appendicitis .....	137	Cellulitis .....	22
Cholecystitis .....	61	Abscess .....	36
Gastric Ulcer .....	39	Gangrene.....	17
Duodenal Ulcer .....	24	Mastitis .....	1
Intestinal Obstruction .....	13	Carbuncle .....	21
Jejunal Ulcer.....	2	Varix .....	3
Pyloric Stenosis.....	4	Phlebitis .....	9
Gastropexia.....	2	Hæmorrhoids .....	66
Peritonitis .....	6	Empyema .....	17
Oesophageal Stricture .....	1	Diseases of Bone .....	17
Renal Calculus .....	13	Diseases of Rectum .....	34
Pyelo-nephrosis .....	3	Cystitis .....	6
Floating Kidney.....	1	Displaced Cartilage .....	15
Perinephritic Abscess .....	6	Bursitis.....	12
Fractures .....	70	Synovitis .....	7
Dislocations .....	1	Deformities .....	11
Injuries, Wounds, etc. ....	53	For Observation .....	24
Burns .....	6	Post operative .....	5
Sprains.....	1	Mastoid .....	5
Prostate.....	45	Simple Tumours.....	13
Hydrocele .....	12	Glands .....	11
Varicocele .....	2	Teeth .....	42
Undescended Testicle.....	1	Subphrenic Abscess .....	2
Urethral Stricture .....	7	Pancreatitis .....	3
Extravasation of urine.....	1	Others .....	54
Retention of urine.....	2		

**PREGNANCY AND DISEASES OF WOMEN.**

Pregnancy .....	237	Puerperal Sepsis.....	1
Albuminuria of Pregnancy .....	2	Ovarian Cyst .....	10
Hyperemesis Gravidarum.....	4	Salpingitis .....	9
Pyelitis of Pregnancy .....	5	Uterine Fibroid.....	5
Placenta Prævia.....	1	Pelvic Cellulitis.....	6
Retained Placenta.....	1	Diseases of Uterus.....	29
Miscarriage .....	106	Disorders of Menstruation.....	21
Puerperal Pyrexia.....	3	Nursing .....	3
Ectopic Pregnancy .....	4	Others .....	14

**DISEASES OF THE SKIN.**

Dermatitis .....	13	Scabies .....	10
Psoriasis .....	7	Impetigo .....	4
Erythema .....	3	Eczema .....	21
Vermineous .....	2	Others .....	11
Sycosis .....	4		

**VENEREAL DISEASES.**

Syphilis .....	8	Gon. Rheumatism.....	3
Gonorrhœa .....	19	Late Syphilis .....	18

**DISEASES OF THE EYE.**

Keratitis .....	1	Corneal Ulcer.....	1
Conjunctivitis .....	1		

**DISEASES OF THROAT, NOSE AND EAR.**

Tonsillitis... ..	25	Deflected Septum .....	1
Tonsils and Adenoids .....	16	Laryngitis .....	4
Otitis Media .....	5	Others .....	25



**CHILDREN.—CLASSIFIED LIST OF DISEASES TREATED.****MEDICAL.**

Bronchitis .....	62	Stomatitis .....	1
Pleurisy .....	10	Constipation .....	4
Asthma .....	3	Catarrhal Jaundice .....	4
Lobar Pneumonia.....	9	Diabetes Mellitus .....	1
Broncho Pneumonia.....	72	Epilepsy .....	4
Endocarditis .....	11	Hydrocephalus .....	1
Pericarditis .....	1	Prematurity .....	5
Acute Nephritis.....	5	Marasmus .....	5
Chronic Nephritis .....	1	Rickets .....	5
Acute Rheumatism .....	16	For Observation.....	16
Chorea .....	19	Nursing .....	201
Arthritis .....	1	Feeble-minded .....	5
Gastro-Enteritis .....	59	Others .....	30

**SKIN.**

Impetigo .....	25	Tinea .....	7
Scabies .....	24	Verrucae .....	1
Dermatitis .....	4	Seborrhoea .....	4
Eczema .....	6	Others .....	2

**DISEASES OF THE EYE.**

Conjunctivitis .....	3	Keratitis .....	1
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**DISEASES OF THE THROAT, NOSE AND EAR.**

Otitis Media .....	5	Tonsils and Adenoids .....	16
Tonsillitis .....	7	Others .....	7

**SURGICAL.**

Carcinoma .....	1	Injuries, Wounds, etc. ....	7
Appendicitis .....	31	Abscess .....	25
Hernia .....	5	Septic conditions .....	3
Intussusception .....	1	Cellulitis .....	4
Empyema .....	12	Mastoid .....	1
Perinephritic Abscess .....	1	Osteo-Myelitis.....	6
Enlarged Glands .....	9	Phimosis .....	5
Fractions .....	6	Teeth .....	4
Brain Tumours .....	4	Others .....	11
Burns and Scalds .....	6		

**INFECTIOUS.**

Scarlet Fever .....	1	Meningitis .....	8
Influenza .....	4	Erysipelas .....	1
Pertussis .....	13	Dysentery .....	8
Measles .....	9	Diphtheria .....	2
Ant. Poliomyelitis Ac.....	1	Mumps.....	1

**TUBERCULOSIS.**

Pulmonary .....	7	Non-Pulmonary.....	30
Syphilis Congenital .....	2		

GEO. P. HARLAN, M.D.,  
*Medical Superintendent.*

*Newcastle General Hospital,*  
*4th April, 1934.*



### MAINTENANCE IN OTHER INSTITUTIONS.

Seven persons were maintained in various special institutions in different parts of the country during the year. The details are as follows :—

Institution.	M.	F.	Type of Case.
Home for Epileptics, Maghull.....	...	1	Epileptic.
St. Elizabeth's School for Epileptics, Much Hadham.....	...	1	Epileptic.
St. Vincent's Hospital for the Dying, Liverpool .....	...	1	Advanced Phthisis.
St. John's Institution for the Deaf and Dumb, Boston Spa.....	...	1	Blind, Deaf and Dumb.
St. John's Home, Birmingham.....	...	1	Deformity.
Hospital of St. John of God, Scorton...	2	...	Cripples.
TOTAL .....	2	5	







REPORTS OF THE VETERINARY OFFICER  
AND INSPECTOR OF PROVISIONS,  
AND OF THE INSPECTOR UNDER THE FOOD AND  
DRUGS ACTS (SENIOR SANITARY INSPECTOR).

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## VI.—FOOD.

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BOVINE TUBERCULOSIS.  
INSPECTION OF MEAT AND PROVISIONS.  
INSPECTION OF FOOD AND DRUGS.







## BOVINE TUBERCULOSIS, AND THE INSPECTION OF MEAT AND PROVISIONS AND FOOD AND DRUGS.

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### TUBERCULOUS MILK.

During the year eight samples were reported by the Bacteriologist to contain tubercle bacilli. The samples were from six different farms, two of which were situated in the County of Northumberland, two in the County of Durham, one in Dumfriesshire, and one in Newcastle-upon-Tyne.

The results of the investigations may be summarised as follows :—

Cases in which tuberculous cows were found and the subsequent "Check" samples were negative.....	5
Case in which a tuberculous cow was found and the subsequent "Check" sample was positive.....	1
(In this case a second "Check" sample was taken and found negative).	

The following table shows the percentage of milk samples found to contain tubercle bacilli during the past 14 years :—

Year.	Percentage of Samples found Tuberculous.
1920 .....	6.3
1921 .....	5.5
1922 .....	7.0
1923 .....	4.5
1924 .....	3.2
1925 .....	8.0
1926 .....	4.0
1927 .....	3.7
1928 .....	3.7
1929 .....	8.7
1930 .....	4.2
1931 .....	3.7
1932 .....	1.8
1933 .....	2.0

NOTE :—Figures relating to the years 1907–1919 are given in the Annual Report for the year 1932.



*Report of the*  
**Veterinary Officer, Inspector of Meat, etc.**

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TO THE MEDICAL OFFICER OF HEALTH.

I have pleasure in submitting the following report which includes the work of inspection under the Public Health Acts during the year 1933.

**Tuberculosis.**

During the year, one animal, housed in a registered cowshed within the City, was found affected with one of the forms of the disease which required it to be dealt with under the Tuberculosis Order of 1925.

The animal was subsequently slaughtered and the owner compensated according to the valuation before slaughter, as agreed upon by the Veterinary Officer, on behalf of the Corporation, and the owner, in accordance with the Order. Upon examination of the carcass and internal organs, the disease was found to come within the category of "tuberculosis not advanced" as defined by the Order and forming the basis for compensation.

When the amount paid as compensation to the owner, costs for cartage and slaughtering, commission on sale, etc., were deducted from the amount obtained through the disposal of the carcass, hide, offal, etc., together with the amount recoverable from the Ministry of Agriculture, there remained a balance of £5 1s. 3d. in favour of the Corporation on the administration of the Tuberculosis Order during the year.

In the course of milk and meat inspection within the City during the year, 976 animals were found on slaughter to be affected with the disease, this being a decrease of 10.05 per cent. as compared with the number found diseased during the previous year.



In 812 cases some part of the carcass or internal organs of each was condemned and destroyed as diseased, whilst in the case of each of the remaining 164 animals it was found necessary, owing to the extent and distribution of the disease, to destroy the entire carcass and internal organs.

*The Milk and Dairies Order of 1926.*

Within the City there are 16 cow-keepers, who occupy 27 registered cowsheds on 17 premises, and possess a total of 243 milch cows. During the year, 180 visits were made to the cowsheds and dairies for the purpose of inspecting the animals, buildings, and the conditions as to cleanliness, etc.

In addition to the tuberculous animal previously referred to, nine milch cows within the registered sheds were found suffering from accidental and other illnesses. As with the tuberculous animal, it was found necessary in five cases, immediately the presence of disease was detected clinically, to adopt precautionary measures by excluding the milk from the public supply. In each of these cases, the animal was found suffering from mastitis, four being due to streptococcal infection, the causal organism in the remaining animal being staphylococci.

The detection, control and isolation of all cases of mastitis and the enforcement of absolute cleanliness within the cowsheds and dairies at all times are details of the utmost importance concerning milk hygiene. Apart from the prevention of tuberculosis being conveyed through the medium of the public milk supply, the importance of perfectly healthy and well groomed cows handled by clean and healthy milkers for the production of milk, is none the less appreciated when it is remembered that the micro-organisms of milk-borne epidemics have been known—during the process of milking by infected dairy workers—to pass directly into the milk pail or gain entrance to the cow's udder and thus set up mastitis. By the former method there is direct contamination of the milk, whilst as a result of the latter the organisms may become excreted with the milk and, in either case, contaminate all other milk with which the infected milk is mixed, and thus possibly give rise to outbreaks of scarlet fever and epidemic sore-throat in human beings.



## DISEASED COWS FOUND IN REGISTERED PREMISES WITHIN THE CITY.

Year.	No. of Cow-keepers.	No. of Registered Cowsheds.	No. of Dairy Premises.	No. of Milch Cows in City.	No. of Diseased Cows.				
					Tuberculosis.		Other Diseases.		Destroyed (under the Tuberculosis Order, 1925)*
					Of Udder.	Other than Udder.	Udder.	Other than Udder.	
1920	26	40	28	565	...	...	...	...	...
1921	25	38	26	574	...	...	...	...	...
1922	25	39	26	489	...	...	...	...	...
1923	25	39	26	484	2	...	8	...	1
1924	22	34	23	436	3	2	2	...	4
1925	21	33	23	337	9	...	1	...	4*
1926	20	31	21	410	5	2	1	3	5*
1927	18	29	19	334	2	4	2	3	6*
1928	19	31	20	308	3	1	1	3	4*
1929	19	30	20	258	4	1	1	2	4*
1930	17	28	18	251	2	3	1	4	4*
1931	16	27	17	243	4	7	1	3	9*
1932	16	27	17	246	4	2	7	3	6*
1933	16	27	17	243	1	...	5	4	1*

NOTE.—Figures relating to the years 1907–1919 are given in the Annual Report for the year 1932.

## INSPECTION OF MEAT AND OTHER FOODS.

The number of animals slaughtered within the City for food purposes during the year was 233,637. Whilst there were 1,383 more cattle and 499 more calves, there were 19,009 fewer sheep and 7,361 fewer pigs, slaughtered than during the previous year.

## ANIMALS SLAUGHTERED ON LICENSED PREMISES WITHIN THE CITY.

YEAR 1933.		1932.	1931.	1930.	1929.
Horses .....	950	1,266	1,983	2,784	2,107
Cows .....	1,517	18,895	18,246	19,823	18,059
Heifers .....	11,399				
Bulls .....	509				
Bullocks .....	6,853				
Calves .....	3,475	2,976	2,895	5,242	4,843
Sheep .....	167,653	186,662	127,106	107,997	103,407
Pigs .....	41,281	48,642	33,160	24,425	41,671
Total Animals .....	233,637	258,441	183,390	160,271	170,187

Of the carcasses and internal organs examined, including those dressed in other districts and sent into the City for disposal, tuberculosis was found present in those of 976 animals, an increase of 9.96 per cent., as compared with the previous year.



Three hundred and fifty-four and three quarters animal carcasses, together with 4,567<sup>3</sup>/<sub>4</sub> lbs. of meat (excluding offal, etc.) were condemned and destroyed as being unfit for human consumption, as compared with 403 animal carcasses and 1,994 lbs. of meat condemned and destroyed during the previous year. Of the 354<sup>3</sup>/<sub>4</sub> carcasses, 165 were condemned on account of tuberculosis, as compared with 169<sup>3</sup>/<sub>4</sub> carcasses condemned on account of that disease out of the previous year's total of 403 carcasses.

Cattle, Calves and Pigs Slaughtered within the City.  (See also previous Table).	Number of Animals found Diseased, Unsound or otherwise unfit for Human Consumption.		* Number of Animals found Tuberculous.	
	Whole Carcasses Condemned.	† Parts or Organs Condemned.	Whole Carcasses Condemned.	‡ Parts or Organs Condemned.
Year 1933.	Year 1933.			
Cows..... 1,517	72	92	68	75
Heifers ..... 11,399	34	74	29	59
Bulls..... 509	3	4	3	4
Bullocks ..... 6,853	19	47	16	36
Totals ..... 20,278	128	217	116	174
Calves ..... 3,475	53	84	3	2
Pigs ..... 41,281	84	1,075	45	575

† Sex not known, 660.      ‡ Sex not known, 61.

\* The figures representing the numbers of animals found tuberculous on slaughter do not necessarily indicate the total number of animals affected with disease, because under the present slaughter-house system it is impossible to guarantee that all those slaughtered are subjected to inspection.

CARCASSES OF BEEF CONDEMNED WITHIN THE CITY DURING THE PAST THIRTEEN YEARS.

Total condemned.		Numbers condemned on account of Tuberculosis.	Percentage Tuberculous.
Year.	Carcasses.	Carcasses.	Per Cent.
*1920	198	171	86.36
1921	90	78	86.66
1922	85	79	92.94
1923	69	58	84.05
1924	66	61	92.42
1925	157	130	82.80
1926	126	102	80.95
1927	123	107	86.99
1928	115	109	94.78
1929	124	118	95.16
1930	147	124	84.35
1931	117	94	80.34
1932	135	120	88.89
1933	128	116	90.62

NOTE.—The above refers to whole carcasses and quarters, but does not indicate the total number of animals found tuberculous, and therefore does not include those carcasses in which only the organs or parts were found diseased and condemned. See preceding table.

\* Figures relating to the years 1907–1919 are given in the Annual Report for the year 1932.



*Public Health (Meat) Regulations of 1924.*

For the purposes of these Regulations, 6,395 visits were made to meat and provision shops, restaurants, stalls, vehicles, etc., and, as a result, 27 contraventions were found requiring to be dealt with, but in no instance, after the offender's attention had been drawn to the matter, were further proceedings necessary.

INSPECTION OF CARCASSES SENT INTO THE CITY FROM OUTSIDE DISTRICTS DURING THE YEAR 1933, INCLUDING THE CARCASSES OF ANIMALS TAKEN UNDER THE TUBERCULOSIS ORDER, 1925, BY OTHER LOCAL AUTHORITIES AND SLAUGHTERED WITHIN THE CITY.

Material Examined.	Condition Found.	How Dealt with.
*Cow Carcass and Organs ...	Tuberculosis.....	Head, lungs, udder and mesenteric fat condemned.
*       "       "       ...	"       .....	Lungs, liver, udder and mesenteric fat condemned.
*       "       "       ...	"       .....	Lungs and liver condemned.
*       "       "       ...	"       .....	Carcass and organs condemned.
*       "       "       ...	"       .....	Lungs, udder and mesenteric fat condemned.
*       "       "       ...	"       .....	Carcass and organs condemned.
*       "       "       ...	"       .....	Head, liver, lungs, mesenteric fat and udders condemned.
*       "       "       ...	Normal .....	Passed.
Cow, 2 quarters.....	"       .....	"       .....
"   2       "       .....	"       .....	"       .....
"   4       "       and organs	Tuberculosis .....	Four quarters and organs condemned.

\* Slaughtered under the Tuberculosis Order, 1925, certificate of examination in each case being sent to the local authority concerned.

**Imported Foodstuffs.**

During the year, 262 vessels carrying meat and other foods from Denmark, Holland, America, Canada, Australia and Madagascar, arrived at the Quayside, this being an increase of six as compared with the number of arrivals during the previous year.

Two hundred and eighty-three visits were made to the wharves and vessels alongside, 2,659 packages, containing meat, etc., being opened and examined. Both before and while being discharged from the vessel, it is not practicable to make more than a general survey or superficial inspection of frozen beef quarters and carcasses of mutton, but these, as well as imported meat arriving by rail within the City, are subjected to supervision and inspection within the cold storage depots and wholesale meat shops.



*Caseos Lymphadenitis.*

During the year, of 17,272 carcasses of mutton, comprising six separate consignments arriving at the Quayside direct from Australia, 800 were examined, four being found affected with the disease, as compared with the arrival of 10,375 Australian carcasses, comprising four separate consignments, during the previous year, of which 516 were examined, one being found diseased.

Whilst notifications from other ports, i.e., London and Liverpool, of carcasses consigned to the City by road or rail have not been received since the year 1932, the inspection of all carcasses arriving by vessel at the Quayside direct continues to be made on a basis of approximately five per cent.

**Foreign Meat, etc., arriving by Vessel.***Fresh Offal, etc. (Packages).*

PIG.—1,715 feet, 1,672 maws, 851 heads, 106 tongues, 46 casings and 5 diaphragms.

*Salted Meat.*

290 barrels pork.

*Frozen Meat.*

BEEF.—11,617 fore and hind quarters and 14,194 crops.

Offal (Packages).—7,685 livers, 1,233 kidneys, 74 skirts, 55 cheeks, 1,228 tails, 10 heads, 10 hearts and 15 tripes.

MUTTON AND LAMB.—23,332 carcasses.

PORK.—4,201 carcasses.

*Other Goods.*

920,592 sides Danish, Dutch, etc., bacon. Cases.—3,552 American bacon and hams, 61,522 tinned meats and 132 sausages.

## NUMBER OF VESSELS AND ORIGIN, ARRIVING WITH FOOD.

Denmark.	Holland.	America.	Canada.	Australia.	Madagascar.
127	103	9	16	6	1



Exported Foodstuffs.

The number of horses slaughtered within the City, for the purposes of the carcasses being exported for consumption on the Continent, was 950, or 316 fewer than during the previous year. In accordance with the requirements of the authorities in Denmark as to horse casings having been prepared by being salted for 14 days, certificates were granted in respect of five consignments, comprising 29 tierces, prior to their being exported to that country.

NUMBER OF VISITS AND INSPECTIONS OF PREMISES DURING THE YEAR 1933.

	Central Markets.			Meat Shops.		Fish Shops.	Provision Shops.						
Slaughter-houses.	Meat and Provisions.	Fruit and Vegetables.	Fish.	Wholesale.	Retail.	Wholesale.	Wholesale.	Wharves and Vessels.	Cold Stores.	Goods Stations (Fish Docks).	Restaurants.	Stalls, Carts, etc.	Food Preparing Factories.
15,830	452	362	361	3167	783	38	15	283	34	10	36	1900	42



POULTRY, GAME, FISH, FRUIT AND VEGETABLES, PROVISIONS, &c., DESTROYED AS BEING UNFIT FOR HUMAN CONSUMPTION  
DURING THE YEAR 1933.

Cause of Unfitness.	Poultry and Game.	Fish.	Fruit and Vegetables.	Provisions, &c.
Unsound and Unwholesome.	Chickens.....140	Cod.....lbs. 462	Garlic.....5 cases	Eggs, 244,000.....lbs. —
	Ducks .....115	Filletts.....25 cases + 1,050	Lettuce .....82 crates	Fish Cakes, 1 box .....—
	Ducklings .....4	Fish (mixed).....50	Oranges.....1 case	Ham .....30 + 458
	Fowls.....4	Haddocks, 1 case + .....840	Pears .....20 barrels	Lard .....28
	Goose.....1	Halibut .....406	Raspberries.....92 chips	Pork Sausage .....120
	Goslings.....2	Kippers, 1 box.....—	Tomatoes .....250 barrels	
	Hares.....6	Plaice, 1 case + .....1,086		TINNED GOODS.
	Leverets.....3	Skate, 1 case + .....878 $\frac{1}{4}$		Apricots, 3 tins .....—
	Partridges.....7	Sole.....1,064		Brawn .....39
	Pheasants .....7	Salmon .....23 $\frac{1}{2}$		Corned Beef.....1,506 $\frac{3}{4}$
	Pigeons .....215	Trout.....23		Condensed Milk, 3 cases + 457 tins .....—
	Rabbits .....392	Turbot .....1		Cherries, 13 tins .....—
	Turkeys.....8			French Beans, 8 tins .....—
	Woodcocks ... 1			Fruits (mixed), 2 cases + 11 tins.....—
				Ham .....236
				Lunch Tongue .....874 $\frac{3}{4}$
				Loganberries, 2 cases .....—
				Pressed Pork.....231 $\frac{3}{4}$
				Peaches, 4 tins.....—
				Pears, 53 tins.....—
				Prawns, 1 tin .....—
				Tomato Puree, 18 tins ... —
				Veal .....60



## TOTAL CARCASSES, &amp;C., DESTROYED AS BEING UNFIT FOR

	Carcasses, etc.				Lungs.				Hearts.			Kidneys	
	Beef.	Veal.	Mutton.	Pork.	Sets Ox.	Sets Calf.	Sets Sheep.	Sets Pig.	Ox.	Sheep.	Pig.	Ox.	Calf.
Tuberculosis .....	116+ 4 qrs.	3	...	45	215	1	...	8	34	...	...	...	...
Caseous Lymphadenitis.....	...	...	4	...	...	...	...	...	...	...	...	...	...
Actinomycosis .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Bacterial Necrosis (including calf diphtheria) .....	1	...	...	...	...	...	...	...	...	...	...	...	...
Pyrexia.....	1	...	...	4	...	...	...	...	...	...	...	...	...
Pyæmia.....	1	1	...	...	...	...	...	...	...	...	...	...	...
Pericarditis (including septic and traumatic).....	2 qrs.	...	1	...	...	...	...	4	...	1	...	...	...
Septic Conditions .....	2	4+1 qr.	6	5	9	...	1	...	...	...	...	2	...
Jaundice .....	...	...	1	3	...	...	...	...	...	...	...	...	...
Metritis .....	1+1 qr.	...	...	...	...	...	...	...	...	...	...	...	...
Fatty Degeneration .....	...	...	...	...	...	...	...	...	...	...	...	1	...
Hyaline Degeneration .....	9 lbs.	14 lbs.	...	...	...	...	...	...	...	...	...	...	...
Pneumonia .....	...	...	...	...	7	1	...	82	...	...	...	...	...
Pleurisy .....	...	...	...	...	12	...	...	4	...	...	...	...	...
Peritonitis .....	...	1	3	1	...	...	...	...	...	...	...	...	...
Pleurisy and Peritonitis.....	...	1	...	3	...	...	...	...	...	...	...	...	...
Mastitis .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Cirrhosis .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Cavernous Hæmangioma ...	...	...	...	...	...	...	...	...	...	...	...	...	...
Uræmia .....	...	...	...	1	...	...	...	...	...	...	...	...	...
Œdema and/or Emaciation..	3	1	17	1	...	...	...	...	...	...	...	...	2
Parasites (distomatosis, cysts, &c.).....	...	...	...	...	10	...	...	1	...	...	...	...	...
Dead, Moribund, Imperfect, Bleeding, Congestion, &c.	2	4	29	9	3	...	...	11	...	...	...	...	...
Immaturity .....	...	3	...	...	...	...	...	...	...	...	...	...	...
Traumatism .....	1 qr. + 694 lbs.	1 + 55 lbs.	1+1 leg + 4 lbs.	28 lbs.	...	...	...	...	...	...	...	...	...
Decomposition .....	1+2 qrs. + 3,041½ lbs.	34+10 sides + 2 qrs. + 85 lbs.	18+6 qrs. + 610 lbs.	2+1 leg + 27¼ lbs.	57	...	4	...	50	120	...	15+ 147 lbs.	...
*Denuded of their peritoneal membranes (prior to im- portation), contrary to the Public Health (Imported Food) Regulations, 1925..	...	...	...	10	...	...	...	...	...	...	...	...	...
Unmarketable (including an- imals from centres of in- fection of scheduled dis- eases).....	...	...	...	...	...	...	...	...	...	...	...	...	...

\* In addition, 5 imported carcasses were



HUMAN CONSUMPTION DURING THE YEAR 1933.

Kidneys.		Livers.			Heads.				Plucks.			Sets Stomachs and Intestines.		Ox Fat.	Cow's Udders.	Ox Tails.	Pig Maws.	Pig Rinds.	Ox Tongues.	Pig Feet.	Sweet-breads.	
Sheep.	Pig.	Ox.	Sheep.	Pig.	Ox.	Calf.	Sheep.	Pig.	Calf.	Sheep.	Pig.	Ox.	Pig.								Calf.	Sheep.
...	...	107	...	1	46	...	...	497 +36 halves	2	...	56	2	...	41	...	...	...	...	13	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	27	...	...	3	...	1	1	...	15	...	...	...	...	...	...	...	...	2	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	1	5	20	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	1	4	14	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...
...	...	229	20	3	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...
...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	1	4	129	3	...	...	...	...	...	55	11	...	...	...	...	...	...	...	...	...	...	...
1	...	1	3	...	...	...	...	...	1	9	1	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24	8 lbs.	70+ 26 lbs.	12+ 46½ lbs.	6½ lbs.	21	2	94	14+ 6 halves	87	205	47	1	...	32 lbs.	...	49+ 75½ lbs.	9 casks	4½ cwts	3	10½ cwts	59+ 3 lbs.	7
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	256	...	...	...	...	...	...	...	...	...

re-exported as an alternative to destruction



### Total Weight of Meat and Other Foodstuffs Condemned.

The approximate total weight of meat and other foodstuffs condemned during the year was 60 tons, 9 cwts. 2 qrs. 16 lbs., comprising :—

	tons.	cwts.	qrs.	lbs.
Beef, Mutton, Veal, Pork ...	45	5	2	24
Offal and Provisions.....	15	3	3	20
	60	9	2	16

### Slaughterhouses.

During the year, 78 separate premises were licensed for slaughtering purposes, this being four fewer than during the previous year. Of the four premises not re-licensed, three are now being used exclusively for the purpose of gut scraping, the remaining one, near private dwellings in the West end of the City, having remained disused since the year 1930.

Of the 78 licensed premises, 13 were vacant during part of the year and 18 were occupied by wholesale firms, the remainder being occupied by retail butchers. Of the total animals dealt with within the City, 144,996, or 62.06 per cent., were slaughtered by wholesale firms, the remaining 88,641, or 37.94 per cent., being slaughtered by retail butchers.

Although an abattoir has not yet been provided for the City, the fact that the majority of the animals are now being slaughtered by wholesale firms, for the purpose of supplying outside districts as well as the City, points to the growing necessity for the provision of modern premises of such dimensions as will enable the whole of the business associated with slaughtering to become centralised, not only for the purposes of more complete inspection and supervision but also for trade expansion and convenience.

### Microscopical Examinations.

During the year, microscopical examinations were carried out as an aid to, or confirmation of, diagnosis in connection with 34 cases under investigation.

The material examined comprised specimens of milk, blood, pus, tissues, and swabs taken from the throats of cows. Of the samples of milk examined for tuberculosis, two were found positive



and sixteen negative ; and of the throat swabs examined for the same disease, one was positive and one negative. In none of the specimens of blood and other tissues examined for anthrax was that disease found present. Of material other than milk or throat swabs examined for tuberculosis and other conditions, three were found positive. In the one case where the examination was made for parasites, it was found positive. These particulars are shown in the following table :—

MICROSCOPICAL EXAMINATIONS.

	Specimens Examined.	Result of Examination.	
		Positive.	Negative.
Samples of Milk examined for Tuberculosis	18	2	16
Throat Swabs examined for Tuberculosis...	2	1	1
Smears made from Tissues and examined for Tuberculosis and other Organisms.....	6	3	3
Parasites .....	1	1	...
Blood examined for Anthrax.....	7	...	7
	34	7	27

### Rats and Mice (Destruction) Act, 1919.

During the year, 159 visits were made to premises in respect of 105 complaints received, 187 premises, including others than those complained of, being inspected and dealt with.

Of the 187 separate premises, rats were found infesting 134, the remaining 53 being found free from any evidence of infestation. As will be seen in table 18, the premises most frequently invaded by the pests were dwellings and shops, these accounting for a little more than 87 per cent. of the whole.

As pointed out in previous reports, many occupiers have the impression that it is only necessary to lay poison bait to solve the problem, no attention being given to the question of prevention. The rat problem, so far as buildings are concerned, is one that invariably involves the question of construction and repair. With the view of obtaining successful results and efficient administration, it has always been the practice—within the City, at least—to place before the public, so far as possible, the best known means of prevention, besides educating the individual occupiers as to the advantages of rendering premises independent, structurally, one from the other, and of operating simultaneously.



## RATS AND MICE (DESTRUCTION) ACT, 1919.

Complaints received.....	105
Number of premises inspected and dealt with in connection with the above .....	187
Number of premises infested with rats.....	134
Number of visits .....	159
KIND OF PREMISES DEALT WITH.	
Dwellings .....	120
Shops .....	43
Offices .....	3
Stables .....	3
Gardens .....	2
Refuse Tips .....	2
Public Houses .....	2
Works .....	2
Garages .....	2
Goods Station .....	1
Storeyard .....	1
Hall .....	1
Factory .....	1
Mill .....	1
Farm .....	1
Piggery .....	1
School .....	1
Total .....	187

## CONTRAVENTIONS.

Offence.	No. of Cases.	Action taken, etc.
<i>Newcastle upon Tyne Slaughterhouse Bye-Laws.</i>		
Slaughtering animals without stunning previously with a mechanically oper- ated instrument.....	7	In each case offender fined £1.
Dirty slaughterhouses .....	9	Offenders cautioned.
<i>Public Health (Meat) Regulations of 1924.</i>		
Dirty food factory .....	1	Offender cautioned.
Dirty butchers' shops .....	2	Offenders cautioned.
Meat conveyed in dirty vehicles.....	8	Offenders cautioned.
Meat, unprotected, lying on floor.....	5	Offenders cautioned.
Meat carried by person not wearing head covering .....	1	Offender cautioned.
Meat exposed outside shop windows.....	3	Offenders cautioned.
Gut scraping in slaughterhouse.....	1	Offender cautioned.
Blowing mutton and veal carcasses with the breath .....	6	Offenders cautioned.

Yours faithfully,

THOMAS PARKER, F.R.C.V.S.,

Veterinary Officer.

Town Hall,

Newcastle upon Tyne, 1.

8th May, 1933.



## Samples taken for Analysis during the Year 1933.

ARTICLE.	No. of Samples obtained.			Result of Analysis.		Action taken.			REMARKS.	
	Formal.	Informal.	Total.	Genuine.	Not Genuine.	Doubtful.	Prosecutions.	Con- victions.		Cases Dismissed.
New Milk .....	928	6	934	913	21	...	7	2	5	In 13 instances the vendors were cautioned by order of the Health Committee. The remaining sample (of the 21 "not genuine") was taken informally—not for proceedings. 1 Case (deficiency slight) was met by a caution.
Skimmed Milk.....	3	...	3	1	2	...	1	1	...	
Condensed Milk .....	...	5	5	5	...	...	...	...	...	
Cream (Tinned and "Fresh").....	...	9	9	9	...	...	...	...	...	
Butter .....	...	5	5	5	...	...	...	...	...	
Margarine.....	...	9	9	9	...	...	...	...	...	
Cocoa .....	...	2	2	2	...	...	...	...	...	
Tea .....	...	6	6	6	...	...	...	...	...	
Sugar.....	...	1	1	1	...	...	...	...	...	
Baking Powder .....	...	2	2	2	...	...	...	...	...	
Custard Powder .....	...	2	2	2	...	...	...	...	...	
Flour.....	...	1	1	1	...	...	...	...	...	
Oatmeal and Wholemeal.....	...	2	2	2	...	...	...	...	...	
Yeast.....	...	4	4	4	...	...	...	...	...	
Rice, Ground Rice, Tapioca, Sago, Semolina, Barley .....	...	6	6	6	...	...	...	...	...	
Cornflour .....	...	1	1	1	...	...	...	...	...	
Pepper .....	...	1	1	1	...	...	...	...	...	
Mustard .....	...	2	2	2	...	...	...	...	...	
Vinegar.....	...	3	3	3	...	...	...	...	...	
Pickles, Sauce and Ketchup.....	...	5	5	5	...	...	...	...	...	
Lard .....	...	4	4	4	...	...	...	...	...	
Cooking Fat and Dripping.....	...	2	2	2	...	...	...	...	...	
Suet.....	1	1	2	1	1	...	...	...	...	The sample "not genuine" (shredded suet) contained rice flour 21%. This was taken informally, a subsequent formal sample being genuine. The manufacturers were cautioned.
Sausage.....	3	15	18	14	4	...	2	2	...	The 4 samples "not genuine" contained excess of preservative (sulphur dioxide), 2 being obtained informally and 2 formally. The vendors were summoned and fined £3 and £5, respectively.
Tripe .....	...	4	4	4	...	...	...	...	...	
Jams .....	...	8	8	8	...	...	...	...	...	
Marmalade .....	...	1	1	1	...	...	...	...	...	
Dried Fruits (Currants, Raisins, Sul- tanias and Prunes) .....	...	5	5	5	...	...	...	...	...	
Candied Peel .....	...	1	1	1	...	...	...	...	...	
Table Jellies .....	...	2	2	2	...	...	...	...	...	
Honey .....	...	1	1	1	...	...	...	...	...	
Dried Herbs (Mint, Parsley, Sage)....	1	3	4	2	2	...	1	1	...	The samples "not genuine" (dried Mint) contained foreign leaves (Ailanthus glandulosa), one was obtained informally and the other formally from the same vendor, who was summoned and fined 10s.
<i>Household Drugs:—</i>										
Tincture of Rhubarb, Syrup of Rhubarb, Paregoric, Cream of Tartar, Tartaric Acid, Camphor- ated Oil, Olive Oil, Glycerine, Gregory Powder, Castor Oil, Glauber Salts, Aspirin Tablets, Syrup of Squills, Syrup of Figs, Liquorice Powder, Iodine, Solu- tion of Iodine, Turpentine Lini- ment .....	...	80	80	80	...	...	...	...	...	
Cod Liver Oil, Cod Liver Oil Cap- sules and Cod Liver Oil and Malt (Extract) .....	...	14	14	13	1	...	...	...	...	The sample "not genuine" (Extract of Malt and Cod Liver Oil) was deficient in cod liver oil, 27%. This was obtained informally, and a subsequent formal sample being genuine, no further action was taken.
Meat Extract ("Bovril").....	...	1	1	1	...	...	...	...	...	
Whisky .....	2	3	5	4	1	...	...	...	...	The sample "not genuine" contained excess water, 3.7%. This was taken informally, and the subsequent formal sample being genuine, the vendors were cautioned.
Rum .....	...	3	3	3	...	...	...	...	...	
Gin .....	...	1	1	1	...	...	...	...	...	
Wines.....	...	3	3	3	...	...	...	...	...	
TOTALS .....	938	224	1162*	1130	32	...	11	6	5	Amount of Penalties :—£17 0s. 0d. †

\* Includes 250 samples taken "in course of delivery" (at railway stations, hospitals, etc.).

† Including £6 0s. 0d. in respect of "Offences other than Adulteration." (See pages 176-7).







## FOOD AND DRUGS ADULTERATION, Etc.

*Total Samples.*—The number of samples of foods and drugs obtained for analysis during the year was 1,162, as against 1,174 in 1932. They were of a varied nature, and included most articles in common use in the household. Of this number 611 were submitted to the Public Analyst, the remainder being samples of milk which were tested in the office and found to be genuine.

*Informal Samples.*—224 informal samples were taken, as against 233 last year. Although legal proceedings cannot be taken in the event of such a sample not being genuine, this method is a useful guide to the general quality of food stuffs sold in any particular district. Any adulterated samples are followed up by “formal” or “official” samples, so that legal proceedings may be taken if necessary.

*Milk Samples.*—As usual, the greatest number of samples obtained has been of milk, one of the most important articles of food, and one which unfortunately lends itself to fraudulent practices. 934 samples were taken, and of these 21 were certified to be below the minimal limits fixed by the “Sale of Milk Regulations, 1901.” Of this number 8 were deficient in non-fatty solids, 11 in milk-fat, and 2 in both. The percentage of deficiency in fat varied from 1.6 to 21.6 (the average being 8.93), and of solids not fat from 0.3 to 8.7 (average, 4.29).

*“Appeal to Cow” Samples.*—In no case was it found necessary to visit farms for the purpose of obtaining samples direct from the cows.

Notwithstanding the large number of samples (1,162) of upwards of 70 different articles of foods and drugs, it was only necessary to institute legal proceedings in 11 cases.

*Samples not Genuine, etc.*—The percentage of all samples not genuine to the total number taken was 2.75 (compared with 4.34 for the previous year). The percentage of non-genuine milk samples to the total number of milk samples obtained was 2.25 (as against 4.43 in 1932). The total number of samples taken was at the rate of 4.06 per 1,000 of the population (estimated) of the City for the year 1933. This is in excess of the number suggested by the Ministry of Agriculture (viz., 3 per 1,000 of the population).



*Margarine.*—9 samples of margarine were purchased and analysed. All were genuine, free from preservatives, and in compliance with the requirements of the Act in all other respects.

*Margarine Warehouses.*—34 visits were made to the registered margarine warehouses in the City. The packages were examined as regards proper marking, and all found to comply with the Act.

*Preservatives in Food.*—Of the total samples obtained for analysis (1,162), only 23 contained preservative, the quantity being in most instances well within the limit allowed.

Four samples of sausage contained sulphur dioxide in quantities above the permissible limit. 2 of these were informal samples, and 2 formal from the same vendors, who were summoned and fined £5 and £3 respectively. In the latter case a fine of £1 was also imposed for not declaring the presence of the preservative as required. In another instance in which such an offence was disclosed, three members of one firm were fined (separately) £1.

#### OFFENCES OTHER THAN ADULTERATION.

OFFENCE.	NO. OF CASES.	ACTION TAKEN, ETC.
<i>Milk and Dairies Order, 1926.</i>		
Sections 27-29.—		
Milk churns in a condition contravening the Order.	3	Offenders cautioned.
Milk churns not properly cleansed before being returned.	13	Do.
Section 30.—		
Selling skimmed milk from hand-cans not properly labelled "skimmed milk."	2	Do.
Section 33.—		
Vehicles used for the conveyance of milk not properly cleansed and purified.	2	Do.
<i>Milk and Dairies (Amendment) Act, 1922, Sec. 2; and Milk and Dairies Order, 1926, Sec. 6.—</i>		
Selling milk without being registered for the purpose.	4	Offenders cautioned in 3 cases; in the other summoned and fined 20/-.
<i>Milk and Dairies (Amendment) Act, 1922, Sec. 3 (1), (b); and the Milk (Special Designations) Order, 1923.—</i>		
Retailing (as ungraded milk) milk in bottles marked "Grade A."	1	Offender cautioned.
Carried forward ... ..	25	Amount of penalties, £1/0/0.



OFFENCES OTHER THAN ADULTERATION—*Continued.*

OFFENCES.	NO. OF CASES.	ACTION TAKEN, ETC.
Brought forward... ..	25	Amount of penalties, £1/0/0.
<i>Milk and Dairies (Amendment) Act, 1922, Sec. 3 ; and the Milk (Special Designations) Order, 1923, Third Schedule, Part i., A (2).—</i> Forwarding, by rail, "Certified" milk in churn (i.e., not bottled on the farm as required)	1	Do.
<i>The Milk (Special Designations) Order, 1923, Third Schedule, Part iii., A (7).—</i> Churns containing "Grade A (Tuberculin Tested)" milk in a condition contravening the Order.	1	Do.
<i>Milk and Dairies (Consolidation) Act, 1915, Sec. 6.—</i> Selling milk from vehicles not inscribed with the name and address of the vendor.	2	In 1 case offender summoned and fined 20/- ; the other was met by a caution.
<i>Public Health (Preservatives, etc., in Food) Regulations, 1925, Sec. 4 (2).—</i> Selling sausage containing preservative (sulphur dioxide) the presence of which was not declared as required.	2	Vendors summoned in 1 case fined 20/-. In the other, three members of one firm fined (separately) 20/- (£3 in all).
<i>Merchandise Marks Act, 1887, Sec. 2 (d).—</i> Selling milk in bottles marked with the names of other dealers.	2	In 1 case the offender was cautioned, and in the other summoned (case adjourned <i>sine die</i> ).
Total ... ..	33	Amount of penalties, £6/0/0.

**The Public Health (Condensed Milk) Regulations, 1923-1927.**

Five samples of condensed milk were obtained. All were genuine and in compliance with the Regulations.

**BACTERIAL IMPURITY OF MILK AND WATER.**

**Milk.**—388 samples were examined by the Bacteriologist for the presence of tubercle bacilli, which were found in 8, or 2.0 per cent. This is a slight increase on last year's figures, which were 8 and 1.8 per cent respectively.

Action taken is described on page 161.



156 samples were examined for evidence of excremental pollution, which was found to an undesirable degree in 36, or 23.1 per cent. In every case the Medical Officer of Health of the district from which the milk originated was informed, with the result that steps were taken to secure more cleanly methods of production.

**Cleanliness of Milk Churns.**—During the year 22,077 churns awaiting return to the farmers were examined at the various railway stations in the City. Of this number, 42 (as compared with 13 in 1932) were found in an uncleansed condition. The offender in each case was cautioned by the Medical Officer of Health.

In addition, 4,217 churns in course of transit through the City were examined, and 3 (as compared with 1 last year) were found in a dirty condition. The matter was reported to the Medical Officers of Health of the districts concerned.

3 farmer-consignors were also communicated with respecting churns found to be defective or not in conformity with the requirements of the Milk and Dairies Order.

**Water.**—Samples were collected from all parts of the City and at the water works, and examined for the presence of *bacillus coli*.

The results are described on page 104.

### **PREMISES ON WHICH FOOD IS PREPARED.**

**Bakehouses.**—There are in the City 290 bakehouses, of which 38 are factories (*i.e.*, places in which mechanical power is used), and 252 are workshops.

The number of “domestic” bakehouses, or private dwelling houses in which the occupier makes bread for sale amongst the neighbours, is 103, a decrease of 5 as compared with 1932. Domestic bakehouses are under the same supervision as when the business is carried on in an ordinary bakehouse, and, generally speaking, are kept in a cleanly state. It is seldom that any contraventions are found.

**Restaurant Kitchens** (which include hotels, cafés, and dining rooms). The number on the register is 117. They are regularly inspected. 11 notices were served during the year (principally for lime-washing, which was overdue). These were all complied with.



*Fried Fish Shops.*—The number of these is 157 (as against 159 in the previous year). For comments see “Offensive Trades” (Section VII.).

*Ice Cream Manufactories and Retail Shops.*—40 applications were received during the year for permission to make and/or sell this commodity. 9 were refused, the general sanitary conditions of the premises not being up to the required standard.

The number of makers of ice cream is 106, as compared with 109 in 1932, whilst the number of retailers only has decreased from 176 to 174.

*The Milk and Dairies (Amendment) Act, 1922, Sec. 2, and The Milk and Dairies Order, 1926, Sec. 6.*—During the year 53 applications were received for permission to retail milk, 43 being granted and 10 refused on sanitary grounds. At the close of the year there were 639 retail milk shops in the City, including 69 belonging to the 10 larger dairy companies. Of the total, 64 were shops in which only dairy products and like commodities were retailed, 532 were shops selling other articles, and 43 were hawkers. All milk-shops and dairies were regularly inspected, and the conditions generally found to be satisfactory.

C. RAIMES,

*Inspector under the Sale of*

*Food and Drugs Acts, etc.*

*Health Department,*

*Town Hall,*

*8th May, 1934.*







REPORT OF THE  
CHIEF SANITARY INSPECTOR.

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VII.—THE HOME AND THE  
WORKSHOP.

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NUISANCES, HOUSING, FACTORIES AND  
WORKSHOPS, Etc.







## NUISANCES, HOUSING, FACTORIES AND WORKSHOPS, ETC.

### The following is the Report of the Chief Sanitary Inspector.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I have pleasure in submitting the following report on the work carried out in my section of the Department during the year ended December 31st, 1933.

### NUISANCES.

The number of nuisances reported upon and dealt with during the year was 10,768, which is a slight decrease upon the previous year. As usual, they were of a most varied character. Sub-letting and overcrowding are found to be the common cause of a large number of complaints, while others are found by the District Inspectors.

Many minor nuisances could have been abated by the occupiers themselves, without the intervention of the Inspector. Difficulty arises when there are several tenants upon whom to place the responsibility, what is everyone's duty being often found to be that of no one. The District Inspectors, however, exercise patience and tact in such cases, with the result that comparatively little friction is caused amongst tenants.

### Overcrowding.

The shortage of houses at rentals suitable for those with small incomes remains much about the same as in previous years. Unemployment has caused many to seek accommodation that is inadequate to their needs; those whose families are growing up or increasing remain in small houses or flats, or very frequently drift into tenements, complaints being numerous. Each is carefully investigated and, when verified, reported to the appropriate Department. There are many cases, however, where the dwellings are not overcrowded either from a moral or legal standpoint, the complaint being made by the occupier as a lever for obtaining a Council house, for which there is a very great demand.



### Notices Served.

The following are the numbers of notices and letters issued during the year :—

Number of notices served :—

Informal .....	5,149
Statutory .....	348
	— 5,497
Number of special letters sent.....	2,093
Number of circular letters sent .....	2,117
	—
Total.....	<u>9,707</u>

### Magisterial Proceedings.

Considering the total number of letters sent out and notices served, it is worthy of note that it was only necessary to take legal proceedings in 13 cases. In the remaining instances in which proceedings were ordered by the Health Committee, the necessary work was carried out without recourse to summonses. The details of this part of the work are given on pages 195-196.

### The Rent and Mortgage Interest (Restrictions) Acts.

Only two applications were received under the above Acts. A certificate was issued in each case and a notice served on the agent to carry out the necessary repairs. Both were complied with.

### Conversion of Dry Closets to Water-closets.

It is satisfactory to report that this most objectionable type of sanitary convenience is being rapidly removed and replaced by water-closets, 178 pail-closets, 14 combined privies and ashpits, and 2 “ cell ” privies having been converted during the year, in addition to 62 pail-closets demolished in slum clearance areas.

During the last ten years, 4,225 have been converted, leaving now only 85 in the City. These being mostly in good flat property of comparatively recent erection, are kept in good structural condition. This large number have all been removed under Sec. 36, Public Health Act, 1875, on the ground of “ insufficiency,” the cost of conversion falling entirely on the owner of the house. The only contribution by the Corporation is the gift of the first dust-bins. Had Sec. 39, Public Health Acts Amendment Act, 1907, been adopted, the cost of conversion would have had to be met out of the rates, and, as the average cost of altering a



privy to a water-closet is at least £6, it will be seen that a saving to the ratepayers of £25,350 has been effected during that period. It is also worthy of note that it was only necessary to have recourse to legal proceedings in 12 instances (6 different owners).

Four “dry” ashpits were also removed and replaced by regulation dust-bins (the first of which was supplied free of charge). Altogether 190 free bins were supplied during the year.

RETURN OF “DRY” CLOSETS IN THE VARIOUS WARDS OF THE CITY.

WARDS.	Total No. Privies.	Pail- Closets.	Cell Privies.	Privies and Ashpits.	
				Privies.	Ashpits.
St. Nicholas' .....	...	...	...	...	...
St. Thomas' .....	...	...	...	...	...
St. John's .....	...	...	...	...	...
Stephenson .....	...	...	...	...	...
Armstrong .....	...	...	...	...	...
Elswick .....	...	...	...	...	...
Westgate .....	...	...	...	...	...
Arthur's Hill .....	...	...	...	...	...
Benwell .....	5	2	3	...	...
Fenham .....	6	3	...	3	2
All Saints' .....	...	...	...	...	...
St. Andrew's .....	...	...	...	...	...
Jesmond .....	...	...	...	...	...
Dene .....	...	...	...	...	...
Heaton .....	1	1	...	...	...
Byker .....	20	20	...	...	...
St. Lawrence .....	7	7	...	...	...
St. Anthony's .....	34	34	...	...	...
Walker .....	12	...	...	12	7
Total in City ...	85	67	3	15	9

**Smoke Abatement.**

This important part of our work still continues to receive constant attention, the number of observations made during the year being 521 of 96 factory and other chimneys. These included a long series of watchings in the case of two large institutions in the City, from one of which the nuisance was of a rather serious nature. The manufacturers of the plant, however, appear to be using every endeavour, in conjunction with this Department, to abate the nuisance.



Thirty-one informal and one statutory notices were served during the year. In addition, the drivers of 5 steam wagons were verbally cautioned about the quantity of black smoke given off. Three of these were strangers to the district and were not observed again in the City; the other two are frequently seen, but the offence has not been found to be repeated.

Legislation, the introduction of smoke-preventing appliances and kindly advice will in time succeed in eliminating factory and other industrial smoke, but there still remains serious pollution of the atmosphere from the domestic or house chimney. This could be prevented by the more extensive use of gas or coke or other smokeless fuel, electricity (on account of the cost) being out of the question in the homes of the working man. The open coal-fire, however, seems to be a fixed institution, and it will probably be many years before people will discontinue the use of this fuel in favour of the more healthy and cleanly alternatives offered.

The following table gives details as to smoke inspection :—

No. of chimneys watched.	No. of observations made.	No. of chimneys from which black smoke issued in such quantity as to be a nuisance.	No. of times when smoke issued so as to be a nuisance.	No. of notices served for the abatement of smoke nuisances.		No. of Prosecutions.
				Informal.	Statutory.	
96	521	21	60	31	1	...

*Atmospheric Pollution Records.*—Three observation stations, under the immediate control of the City Analyst, are placed—one in Westgate Cemetery, one in the grounds of the Moor Hospital, and one at the Welbeck Reservoir, in connection with similar stations in other towns, the monthly results from all of which are compared and published by the Department of Scientific and Industrial Research.



The monthly readings from the Newcastle stations are appended :—

ATMOSPHERIC POLLUTION.—NEWCASTLE RECORDS, 1933.

TOWN MOOR GAUGE.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Car- bonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as S.O <sub>3</sub> .	Chlorine as Cl.	Ammonia as N.H <sub>3</sub> .	Sulphate as S.O <sub>4</sub> .
January ..	39.8	0.17	1.12	1.51	1.90	1.99	6.69	1.07	0.26	0.10	3.26
February	106.5	0.26	1.29	2.16	1.70	6.18	11.59	1.68	2.19	0.16	2.02
March .....	41.2	0.31	1.41	1.75	0.99	2.39	6.85	1.08	0.23	0.04	1.29
April.....	48.3	0.06	1.12	1.45	1.45	6.08	10.16	1.22	0.38	0.10	1.46
May .....	52.5	0.11	1.41	1.51	1.89	2.41	7.33	1.19	0.26	0.09	1.43
June .....	86.6	0.04	1.34	1.53	1.73	2.26	6.90	1.01	0.31	0.33	1.21
July.....	68.2	0.14	1.79	1.51	1.78	1.78	7.00	0.89	0.21	0.06	1.08
August ...	71.0	0.07	1.62	1.49	1.42	1.85	6.45	0.82	0.20	0.03	0.99
Sept. ....	62.5	0.11	0.84	0.95	1.75	1.50	5.15	0.98	0.27	0.13	1.18
October...	109.3	0.20	0.92	1.39	2.19	3.72	8.42	1.05	0.78	0.38	1.26
Nov. ....	115.0	0.21	0.65	1.31	3.00	3.90	9.07	1.42	1.39	0.23	1.70
Dec. ....	42.6	0.30	1.57	2.56	1.11	3.75	9.29	1.22	0.50	0.09	1.46
Total, 12 months...	843.5	1.98	15.08	19.12	20.91	37.81	94.90	13.63	6.98	1.74	18.34
Average per month	70.3	0.16	1.26	1.60	1.74	3.15	7.91	1.14	0.58	0.15	1.53

An average of 7.91 metric tons per square kilometre per month=7.6 cwts. per acre per annum, or 243 tons per square mile per annum, as compared with 6.0 cwts. per acre, or 193 tons per square mile in 1932.



## WESTGATE CEMETERY GAUGE.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Car- bonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as S.O <sub>3</sub> .	Chlorine as Cl.	Ammonia as N.H <sub>3</sub> .	Sulphate as S.O <sub>4</sub> .
January ..	33.9	0.35	4.11	5.70	0.81	2.10	13.07	1.05	0.28	0.14	1.25
February	92.3	0.40	3.53	4.40	2.96	4.61	15.90	1.40	1.83	0.28	1.67
March .....	28.5	0.26	1.89	2.46	0.80	2.62	8.03	0.65	0.18	0.03	0.78
April .....	27.1	0.14	1.91	2.58	0.65	1.25	6.53	0.58	0.23	0.05	0.71
May .....	39.4	0.16	3.81	3.96	1.02	4.41	13.36	0.71	0.19	0.04	0.84
June .....	55.6	0.09	1.64	2.69	0.68	1.89	6.99	0.53	0.20	0.22	0.64
July.....	54.3	0.14	2.05	3.42	0.87	1.41	7.89	0.56	0.15	0.05	0.66
August ...	28.5	0.04	1.71	1.85	0.91	1.03	5.54	0.33	0.12	0.03	0.39
Sept. ....	43.4	0.16	2.55	3.53	0.96	1.64	8.84	0.72	0.22	0.05	0.87
October...	96.4	0.19	2.01	2.59	1.74	2.70	9.23	0.92	0.68	0.34	1.11
Nov. ....	88.2	0.13	0.90	1.98	1.94	3.00	7.95	1.09	0.95	0.18	1.30
Dec.....	35.3	0.38	2.58	3.37	0.77	3.46	10.56	0.90	0.45	0.11	1.07
Total, 12 months...	622.9	2.44	28.69	38.53	14.11	30.12	113.89	9.44	5.48	1.52	11.29
Average per month	51.9	0.20	2.39	3.21	1.18	2.51	9.49	0.79	0.46	0.13	0.94

An average of 9.49 metric tons per square kilometre per month=9.1 cwts. per acre per annum, or 291 tons per square mile per annum, as compared with 8 cwts. per acre, or 256 tons per square mile in 1932.



## WELBECK RESERVOIR GAUGE.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Car- bonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as S.O <sub>3</sub> .	Chlorine as Cl.	Ammonia as N.H <sub>3</sub> .	Sulphate as S.O <sub>4</sub> .
January ..	29.9	0.16	1.60	2.55	1.08	2.03	7.42	0.96	0.30	0.12	1.16
February	39.1	0.13	0.79	1.67	1.72	4.14	8.45	0.73	1.58	0.14	0.87
March .....	23.4	0.18	1.45	2.02	1.41	2.34	7.40	1.25	0.40	0.05	1.50
April .....	26.0	0.07	1.05	2.15	1.04	1.77	6.08	0.81	0.35	0.07	0.96
May .....	35.1	0.12	1.29	2.59	0.85	1.96	6.81	0.79	0.22	0.09	0.95
June .....	49.5	0.16	1.40	2.37	1.08	2.08	7.09	0.74	0.29	0.14	0.89
July.....	36.5	0.39	3.11	3.15	0.73	1.97	9.35	0.65	0.26	0.03	0.78
August ...	26.0	0.07	1.18	2.25	0.94	1.56	6.00	0.53	0.21	0.05	0.64
Sept. ....	32.6	0.09	1.07	2.33	1.82	0.59	5.90	0.74	0.31	0.05	0.89
October...	82.0	0.21	1.65	2.55	1.48	3.93	9.82	1.24	0.99	0.29	1.48
Nov. ....	72.9	0.17	1.46	1.54	1.90	3.65	8.72	1.25	1.18	0.13	1.50
Dec. ....	32.5	0.18	1.16	2.36	1.50	2.60	7.80	1.09	0.65	0.07	1.31
Total, 12 months...	485.5	1.93	17.21	27.53	15.55	28.62	90.84	10.78	6.74	1.23	12.93
Average per month	40.5	0.16	1.43	2.29	1.30	2.39	7.57	0.90	0.56	0.10	1.08

An average of 7.57 metric tons per square kilometre per month=7.3 cwts. per acre per annum, or 232 tons per square mile per annum, as compared with 7 cwts. per acre, or 224 tons per square mile in 1932.



## TOTAL IN THREE GAUGES IN THE CITY—1933.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Car- bonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as S.O <sub>3</sub> .	Chlorine as Cl.	Ammonia as N.H <sub>3</sub> .	Sulphate as S.O <sub>4</sub> .
Total, 12 months...	1951.9	6.35	60.98	85.18	50.57	96.55	299.63	33.85	19.20	4.49	42.56
Average per month	162.7	0.53	5.08	7.11	4.21	8.04	24.97	2.82	1.60	0.37	3.55
Average per gauge 12 months	650.6	2.11	20.32	28.42	16.85	32.18	99.88	11.28	6.40	1.50	14.19
Average per gauge per month	54.2	0.18	1.69	2.37	1.40	2.68	8.32	0.94	0.53	0.12	1.18

An average of 8.32 metric tons per square kilometre per month=8.0 cwts. per acre per annum, or 256 tons per square mile per annum, as compared with 7.0 cwts. per acre, or 224 tons per square mile in 1932.



For comparison with the foregoing, the following returns of sunshine recorded at the Armstrong College, Newcastle, and at Cockle Park, near Morpeth (about 15 miles from the City), are given :—

Month.	Armstrong College. Sunshine (hours).	Cockle Park. Sunshine (hours).
January .....	29·2	51·4
February .....	57·4	73·9
March .....	118·8	153·3
April .....	92·3	112·4
May .....	94·1	103·5
June .....	211·7	233·0
July .....	196·4	200·1
August .....	168·8	201·9
September .....	88·3	123·3
October .....	67·0	86·7
November.....	40·8	51·3
December .....	11·4	34·6
Total for year.....	1176·2	1425·4
Average per month.....	98·0	118·8

### CINEMAS, THEATRES, AND OTHER PLACES OF PUBLIC ENTERTAINMENT.

By a Ministry of Health Circular issued in 1920, Sanitary Authorities are required to give particular attention to premises holding a licence for music, dancing, etc., special regard having to be given to sanitary conveniences, dressing rooms, ventilation, and means of escape in case of fire.

In pursuance of this order, 16 applications were received for certificates of sanitation which must be submitted to the Licensing Justices before a music or dancing licence is granted or renewed. After a careful inspection of the premises, all were granted; three were a re-issue of certificates previously granted.

The number of places so certified is now 4 theatres and music halls, 35 cinemas, and 104 concert halls, billiard rooms, cafes, etc., 133 visits were made both during the day and night time to inspect the sanitary arrangements, dressing rooms, etc., which were generally found to be in order.



Testing of the air and ventilation systems has again been carried out, every cinema, theatre and music hall being tested with the "Kata" thermometer, and only in two cases was it found necessary to communicate with the management on account of the somewhat high temperature prevailing in their houses.

In addition, tests for demonstration purposes were made in four classrooms at the Rutherford College, two in private houses; and three in workshops, giving a total of 101 separate buildings. It may be taken that the ventilation of our cinemas and other like places is of a fairly high standard.

### OFFENSIVE TRADES.

25 applications for permission to establish the trade of a fish fryer were received during the year. Of that number 6 were granted and 19 refused, the proposed premises not being up to the standard required in this City.

This class of "offensive trade" still predominates, there being now 157 on the register (against 159 last year). This is a reduction on the previous year of 2 fish fryers, 2 rag and bone dealers, and 1 tripe boiler.

The fried fish shops are inspected both by day and night, and only in one case was it necessary to serve a notice to carry out requisite cleansing; three other minor contraventions were remedied as a result of verbal cautions.

The number of offensive trades now on the register is :—

Fish fryers .....	157
Rag and bone dealers .....	10
Tripe boilers .....	7
Gut scrapers .....	4
Dealers in hides and skins.....	4
Bone boilers .....	4
Fat melters and extractors.....	2
Glue and size makers.....	2
Soap boiler .....	1
Dealer in blood or other putrescible animal products .....	1

These are systematically inspected, 1,420 such visits being made during the year.



SUMMARY OF NUISANCES, ETC., FOR THE ABATEMENT OF WHICH NOTICES  
WERE SERVED DURING 1933.

Foul pail-closets (to replace with water-closets).....	22
Defective waste water-closets (to replace with fresh water-closets with flushing cisterns, etc.).....	11
Foul or defective ashpits not connected with privies (to remove and provide dust bins) .....	10
Insufficient water-closet accommodation (additional water-closets ordered) .....	15
Defective or insufficient dust bins (for houses) .....	1,374
"          "          "          (for business premises).....	504
Defective water-closets.....	869
Water-closets without adequate water supply .....	39
Choked water-closets (mostly served on tenants).....	36
Dirty water-closets (all served on tenants).....	18
Defective drains (to repair, or construct new drains) .....	175
Insufficient means of drainage.....	11
Choked drains, etc.....	281
Defective, want of, or choked sinks, waste pipes, etc.....	304
No sink provided.....	12
Defective or choked soil-pipes, vent shafts, etc. ....	22
Sink waste-pipes not trapped .....	24
Want of or defective pavement in yards, passages, etc. ....	339
Dirty rooms .....	30
Dirty bedding .....	1
Damp rooms.....	292
Overcrowding.....	7
Dirty yards, passages, stairs, etc.....	56
Animals, pigeons, and fowls improperly kept.....	24
Offensive accumulations.....	86
Accumulations of manure .....	12
Want of or defective manure pits.....	11
Broken roofs and want of or defective or choked spouting.....	1,004
Want of water (other than in tenements—see below).....	128
Smoke nuisances .....	21
Want of proper ventilation to rooms (including to floor space), broken window cords, etc. ....	421
Structural defects—internal and external—(broken plaster, floors, stairs, walls, fireplaces, etc.).....	2,995
Cisterns supplying water to sinks, etc., dirty or defective .....	3
Stables (unsuitable, defective, etc.).....	7
Piggeries .....	4
Food manufactured or stored for sale under improper conditions.....	6
Bakehouses—Dirty, etc. ....	120
Fried fish shops—(Want of cleansing).....	1
"          "          "          (other defects and contraventions).....	3
Ice Cream—(name and address of vendors not inscribed on barrows).....	3
"          "          (Defects on premises of maker or retailer).....	2
Public-houses—(Sanitary accommodation defective, insufficient, etc.)...	2
Council (and other) Schools—	
Defective water-closets and urinals .....	2
Drinking Fountains—Cups missing, waste pipe defective.....	2
Dustbins required .....	1
Cellar dwellings illegally occupied.....	3
Tenements—Limewashing not done.....	45
No adequate accommodation for washing of clothes .....	139
"          "          storage of food.....	430
"          "          preparation and cooking of food .....	118
Water supply and sinks not adequate, conveniently accessible, etc. ....	216
Water supply (only) not adequate, conveniently acces- sible, etc. ....	39
Insufficient number of water-closets provided.....	38



SUMMARY OF NUISANCES, ETC.—Continued.

Tenements— <i>continued.</i>		
Inadequate lighting of common staircases—Natural ....	38	} 166
Artificial	128	
Staircases without proper handrails, etc.....		64
Houses converted to “tenements” without the Bye-laws being com- plied with .....		10
Cinemas—Temperature excessive .....		2
Other defects and contraventions.....		5
Name and address of landlord and of Medical Officer of Health not inscribed upon tenants’ rent books.....		3
Tents, vans, sheds, and similar structures (kept or placed on land without the approval of the Corporation) .....		2
Unclassified minor nuisances.....		178
TOTAL.....		10,768

DETAILS RELATING TO CERTAIN WORKS CARRIED OUT IN THE ABATEMENT OF  
NUISANCES AND TO INSPECTIONS MADE DURING 1933.

Length (in yards) of old drains removed.....	1,031
Length (in yards) of new drains constructed.....	2,126
New trapped gullies provided to drains.....	342
Combined privies and ashpits removed	
} Privies.....	14
} Ashpits .....	7
“Cell” privies removed (in Walker) .....	2
Pail-closets removed .....	240
Defective water-closets removed.....	79
Water-closets provided (in place of the foregoing privies and defective water-closets removed, also in 37 cases where the accommodation was previously insufficient) .....	309
Dry ash-pits removed and replaced by galvanised iron dust bins.....	4
Dust bins substituted for dry ash-pits where water-closets existed, and provided in cases where privies have been replaced by water-closets .....	*190
No. of drains tested.....	625
No. of tests of above drains made by smoke and water .....	665
No. of inspections from complaints made at office (verbally or by letter) .....	4,750
No. of tenement inspections made .....	13,124
No. of contraventions of Tenement Bye-laws for which notices have been served to obtain remedy .....	2,601
Inspections of houses made from complaints received outdoors or nuisances discovered in the districts, including a large number of minor nuisances, such as choked drains and dirty yards, the abatement of which was accomplished at the time of visit, and without legal notice.....	6,005
Inspections to learn if works ordered were in progress.....	13,868
Supervisions of work in progress.....	6,458
Common yards and courts in the worst localities specially visited on Friday afternoons and Saturday mornings to obtain weekly cleansing .....	20,730
Inspections after infectious disease .....	1,816
Inspections of milk shops and ice creameries (including retail shops)...	1,227
,,    bakehouses .....	†1,732
,,    offensive trades .....	1,420
,,    wholesale margarine warehouses.....	34
,,    as to limewashing of tenements.....	1,582
,,    of schools .....	181
,,    under Housing Acts .....	3,691
Inspection of cinemas, etc. (day visits, 92; night visits, 41).....	133
Tents, vans, sheds and similar structures.....	82
Miscellaneous visits .....	4,664

\* Dust bins supplied free by Corporation.

† Including 1,347 inspections made under the Factory and Workshop Acts by the Assistant Inspectors of Workshops.



SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE  
MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC.,  
DURING THE YEAR 1933.

NATURE OF COMPLAINT.	No. of Cases.	Work done and Nuisances abated without the Summonses ordered being applied for.	Summonses issued.	
			Work done and Summonses withdrawn.	Other Results.
<i>Public Health Acts :—</i>				
Roofs and spouting defective .....	5	4	...	In one instance owner fined 20/-.
Dampness in rooms, etc. ...	5	4	1	
Yard pavements defective...	5	4	1	
Woodwork of scullery sinks defective.....	2	2	...	
Dirty rooms .....	1	...	1	
Other nuisances.....	6	6	...	
<i>Public Health Act, 1875, Section 36, and Newcastle upon Tyne Improvement Act, 1892, Section 53 :—</i>				
Water-closets defective, without adequate water flush, etc. ....	5	3	1	In one instance owner fined 5/-.
<i>Public Health Act, 1875, Section 94, and the Public Health (Smoke Abatement) Act, 1926, Section 1) :—</i>				
Smoke emitted from boiler chimney so as to be a nuisance .....	1	1	...	
<i>Newcastle upon Tyne Corporation Act, 1911, Section 55 :—</i>				
Want of or defective dust bins for house refuse.....	5	4	...	In one instance owner fined 5/-.
<i>Newcastle upon Tyne Improvement Act, 1892, Section 63 :—</i>				
Horse kept in place unfit ...	1	...	...	Order made prohibiting the use of the shed for the keeping of animals.
Carried forward.....	36	28	4	4



SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE  
MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC.,  
DURING THE YEAR 1933.—*Continued.*

NATURE OF COMPLAINT.	No. of Cases.	Work done and Nuisances abated without the Summonses ordered being applied for.	Summonses Issued.	
			Work done and Summonses withdrawn.	Other Results.
Brought forward.....	36	28	4	4
<i>Newcastle upon Tyne Corporation Act, 1926, Section 33 :—</i>				
Living vans kept on land without the approval of the Corporation .....	2	...	...	One case dismissed on defendant vacating the van, having obtained a house elsewhere. One case standing adjourned.
<i>Bye-laws with respect to Tenemented Houses :—</i>				
Water-closet accommodation insufficient (No. 8) .....	1	1	...	
Water-closet drain obstructed (No. 11) .....	1	...	1	
Common staircases not kept in proper repair (No. 18a)...	1	1	...	
Rooms inadequately ventilated (window sash-cords broken, etc.) (No. 26c).....	3	3	...	
Water supplies and sinks inadequate, not conveniently accessible, etc. (No. 28d)	2	2	...	
Limewashing of yards, passages, staircases, etc. (No. 28a) .....	2	1	1	
Yard pavement defective (No. 28b) .....	1	1	...	
Inadequate accommodation for—				
(a) Washing of clothes (No. 28f.i.) .....	2	2	...	
(b) Storage of food (No. 28f.ii.) .....	2	2	...	
(c) Preparation and cooking of food (No. 28f.iii.).....	2	1	...	In one instance owner fined 20/-.
Houses not throughout of adequate stability (structural defects, including floors, plaster, etc.) (No. 28g) .....	3	3	...	
TOTALS .....	58	45	6	7

Total amount of Penalties :—£2 10s. 0d.



## HOUSING.

## The Housing Acts, 1925 and 1930.

The number of inspections under the Housing Acts, 1925 and 1930, was 3,691. A very large number of houses has been thoroughly overhauled and put into good condition.

Sections 19 and 20 of the 1930 Act have also been put into operation in regard to individual unfit houses. Section 19, briefly, gives the Local Authority power to order the demolition of an insanitary house. The owner is requested to appear before the Health Committee, when the condition of the house and any proposals which he may desire to submit in regard to it are considered. Up to the end of the year 44 houses, with a population of 406, had been dealt with, with the following results :—

	Number of	
	Houses.	Separate Holdings (or Families).
Demolition Orders made ... ..	32	83
Closing Orders made ... ..	2	10
Premises retained for business purposes (owners finding alternative accommodation for tenants displaced) ... ..	7	23
Otherwise dealt with... .. (i.e., converted to wash-house for adjoining tenants (1), merged into Clearance Area (1), case pending (1)).	3	6
TOTALS ... ..	44	122



## MINISTRY OF HEALTH TABLE.

1.—*Inspection of Dwelling Houses during the Year :—*

(1) (a) Total number of dwelling houses inspected for housing defects (under Public Health or Housing Acts).....	5,050
(b) Number of inspections made for the purpose .....	10,705
(2) (a) Number of dwelling houses (included under sub-head (1) above) which were inspected and recorded under the Housing Consolidated Regulations, 1925.....	1,412
(b) Number of inspections made for the purpose.....	3,691
(3) Number of dwelling houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation...	*579
(4) Number of dwelling houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects reasonably fit for human habitation .....	2,439

(\*Dealt with as Clearance Areas (see page 199),  
or as Individual Unfit Houses).

2.—*Remedy of Defects during the year without Service of formal Notices :—*

Number of defective dwelling houses rendered fit in consequence of informal action by the Local Authority or their officers.....	423
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3.—*Action under Statutory Powers during the Year :—*

(a).—Proceedings under Sections 17, 18 and 23, of the Housing Act, 1930—

(1) Number of dwelling houses in respect of which notices were served requiring repairs.....	770
(2) Number of dwelling houses which were rendered fit after service of formal notices :—	
(a) By owners .....	761
(b) By Local Authority in default of owners.....	...

(b.)—Proceedings under Public Health Acts :—

(1) Number of dwelling houses in respect of which notices were served requiring defects to be remedied.....	1,246
(2) Number of dwelling houses in which defects were remedied after service of formal notices :—	
(a) By owners .....	1,239
(b) By Local Authority in default of owners.....	...

(c.)—Proceedings under Sections 19 and 21 of the Housing Act, 1930 :—

(1) Number of dwelling houses in respect of which Demolition Orders were made.....	32
(2) Number of dwelling houses demolished in pursuance of Demolition Orders .....	4

(d.)—Proceedings under Section 20 of the Housing Act, 1930 :—

(1) Number of separate tenements or underground rooms in respect of which Closing Orders were made.....	10
(2) Number of separate tenements or underground rooms in respect of which Closing Orders were determined, the tenement or room having been rendered fit.....	...



### Clearance Areas.

In June, a Ministry of Health Inquiry was held in respect of 18 Clearance Areas. Of these, one (Blythe Nook) was withdrawn. The remaining 17 Areas contained 189 houses, with 457 separate families, and a total population of 1,673.

Nine of these Areas were fully confirmed by the Minister, and eight with slight modifications. For details see following table.

Area.	(a) (As originally represented).			(b) (As confirmed by the Minister of Health).		
	Houses.	Dwell- ings.	Popu- lation.	Houses.	Dwell- ings.	Popu- lation.
Scotswood Road :—						
(Carr Street) .....	13	30	107	12	29	100
Do. (Weatherley Street)	15	55	197	9	41	145
Do. (Brunel Street) .....	21	40	158	17	33	131
Do. (Mill Street) .....	24	31	145	24	31	145
Do. (Nos. 889-901) .....	7	21	92	5	15	62
Gallowgate .....	25	63	203	14	35	107
Caledonia Street .....	3	18	77	3	18	77
Cambrian Row .....	31	45	179	31	45	179
Javel Groupe.....	7	25	75	5	17	53
Long Stairs .....	3	12	46	3	12	46
Queen's Lane.....	4	11	37	4	11	37
College Yard .....	11	24	79	11	24	79
Hanover Street.....	6	18	56	5	13	46
Dog Bank .....	4	8	36	4	8	36
Pandon .....	6	21	62	5	18	49
Wall Knoll.....	5	20	75	5	20	75
Cox Chare .....	4	15	49	4	15	49
TOTAL .....	189	457	1,673	*161	385	1,416

#### \*EXCLUSIONS.

	Houses.	Dwellings.	Population.
(a) Subject to reconditioning	23	60	220
(b) Unconditionally .....	3	9	27
(c) Conversion to business premises .....	2	3	10
TOTAL .....	28	72	257

The Inquiry, which continued for four days, was largely attended by the owners and others acting for them, and there was the usual opposition to the action of the Corporation.



All the houses in practically every area, were very old, damp, dilapidated, closely congested, and quite beyond repair or reconstruction.

Amongst the outstanding defects may be mentioned :—

*Structures.*—Defective brick or stone work, damp-proof courses either defective or non-existent, chimney stacks and pots displaced and in some cases in danger of falling.

*Roofs.*—Slates and tiles broken, loose and missing ; flashings and spouts defective.

*Floors and Stairs.*—Worn and uneven, handrails loose, dark, badly ventilated, and difficult of access.

*Windows.*—Rotting and perished frames and sashes, broken sash cords and fasteners.

*Doors.*—Badly fitting, warped, and hinges broken.

*Grates and Stoves.*—Badly set, defective, fire-bars missing, ovens out of order.

*Sanitary accommodation.*—W.C.'s used in common by several tenants, dark, dirty and in bad structural condition.

*Water supplies and Sinks.*—Not conveniently accessible to all the tenants.

*Overcrowding.*—Both in the houses and on space, prevalent in every area.

**Houses Demolished, etc.**—Apart from action by the Health Committee, 16 tenemented houses (of 58 holdings), 4 flats, 36 self-contained houses, 123 munition cottages (Scotswood), and 1 common lodging house, have been demolished, or have ceased to be used as dwellings, for various reasons (dilapidations, street improvements, conversion to business premises, etc.).

**Houses built during the year 1933.**—The City Engineer reports that there were 954 self-contained houses, and 852 houses in flats (1,704 tenancies), built privately during the year under report. In addition, 1,030 dwellings were provided under housing schemes.

### **Tents, Vans, Sheds and Similar Structures.**

There now remain only six vans in the City occupied as dwellings. These are on isolated plots of land and occupied by persons unable to pay rents demanded for dwelling-houses even when they are obtainable.



They all comply with the Bye-laws and, so far as cleanliness is concerned, compare very favourably with many dwelling-houses. The large colonies which existed for some years have been removed. In one case the occupier of a van in the Ouseburn Valley who had been twice fined, removed after the second conviction and was again found in a large yard in Byker. He was again summoned and, after three adjournments, was fined 20/- ; he then left the ground and obtained a one-room holding in a tenemented house near to, where he is at present residing.

### **Tenemented Houses.**

Owing to the number of Clearance Areas and action taken under Sections 19 and 20 of the Housing Act, 1930, the number of these houses in the City is decreasing and will be still further reduced in the near future.

One particularly undesirable feature of this type of house is the conversion of large self-contained houses into single-room holdings, which are occupied by mixed families, and are frequently found overcrowded either from a hygienic or moral standard.

A house-to-house inspection of an area bounded on the south by Scotswood Road, north by Elswick Road, east by Rye Hill, and west by Beech Grove Road and Brunel Street, revealed a total of 191 such houses, with 933 holdings, and a total population of 3,138 persons of all ages. The houses in this area were originally self-contained and built for one family only, and for many years were the homes of some of the most prosperous families in the City. For some time past, however, owing to changing social conditions, they have been converted into tenements and now house from two to twelve families.

When it is considered that these rooms are occupied, as a rule, by the unemployed, whose only income is from Unemployment Insurance or Public Assistance allowances, and that the rents charged vary from five to eight shillings per week for one room, it is quite evident that little is left for the comforts and necessities of life.

When this conversion into tenements takes place, the requirements of the Bye-laws are put into operation, but even when these are complied with the houses cannot be said to come up to the standard of decent homes. They do not, for one thing, possess the amount of privacy essential for home life, and, further, a house originally built and planned for one family is unsuitable for the accommodation of from two to twelve.



The number of tenemented houses in the City at the end of the year was 3,407, consisting of :—

2,923	...	One-room holdings.
5,721	...	Two-room holdings.
1,114	...	Three-room holdings.
120	...	Four-room holdings.
2	...	Five-room holdings.

A total of 9,880 separate holdings. During the year 13,124 inspections have been made of this type of dwelling.

### **Tenement Bye-laws.**

In addition to the Clearance Areas already reported upon, 185 tenemented houses, comprising 733 separate holdings, have been inspected and reported upon in detail during the year, with a view to the Bye-laws being put in force. It was found necessary to report for legal proceedings in only 20 cases, as against 91 in 1932. In the majority of cases the necessary works were put in hand or completed after the issue of the summons and before the hearing took place. In one case (inadequate cooking accommodation) the owner was fined 20/-.

### **New Buildings and Sanitary Alterations.**

420 plans were examined by the Medical Officer of Health before their submission to the Town Improvement and Streets Committee and, where necessary, suggestions forwarded to the City Engineer for his consideration, as compared with 421 during the previous year.

### **Common Lodging Houses.**

At the end of the year there were on the Register 27 common lodging houses, as compared with 31 in 1932, four being removed from the Register, chiefly owing to the scarcity of lodgers. This is alleged to be chiefly due to the action of the Public Assistance Committee, who will not grant relief to any able-bodied person under the age of 60 residing in a house of this description.

No new houses were registered during the year.

The total number of lodgers for which the houses are registered is 898, showing a decrease of 131 from last year, due to the removal of the four houses mentioned and alterations in two existing houses (four rooms being discontinued as bedrooms). 3,948 inspections during day time and 120 at night time have been



made, and it is satisfactory to note that it was unnecessary to resort to legal proceedings to remedy contraventions of the Bye-laws governing the management of the houses.

The average number of lodgers per night was 553, the highest number being 599, and the lowest 498.

The following summary shows in detail the accommodation as at the end of the year :—

Description of Lodgers.	No. of			Accommodation.			
	Houses.	Single Beds.	Double Beds.	Married Couples.	Single Women.	Single Men.	Total.
Married couples and single women .....	2	64	10	10	64	...	84
Women only .....	1	18	...	...	18	...	18
Men only .....	24	796	...	...	...	796	796
TOTAL .....	27	878	10	10 20 persons	82	796	898

Summary of inspections, contraventions found, etc.

Number of houses on the register at the end of the year.....	27
Applications for registration (Newcastle Corporation Act, 1911, Sec. 63); 30 granted, 1 refused .....	31
Houses ceased to be occupied as common lodging houses.....	4
Inspections made in the day-time.....	3,948
Inspections made in the night-time.....	120
Notices served { re washing of bed clothes, 116 } { re lime-washing of houses, 58 } .....	174
Contraventions of Bye-laws, etc. :—	
Structural defects in houses .....	9
Defective water-closets .....	13
Defective roofs and defective or choked spouting.....	8
Choked W.C.'s and drains.....	7
No water supply .....	5
Dust bins defective or insufficient.....	4
Lack of efficient ventilation (broken sash-cords, etc.).....	3
Sinks and waste-pipes choked and/or defective.....	2
Deaths reported.....	2
Cases of infectious disease reported (measles 1, tuberculosis 3) .....	4

Factories and Workshops.

The inspection of these has been well maintained during the year, the total number of inspections being 9,209. These included visits to workshops, domestic workshops, workplaces, laundries and bakehouses, also to factories on receipt of complaint from H.M. Inspector. Generally speaking their condition as regards sanitary accommodation, ventilation, cleanliness, water supply, and other matters of a hygienic nature, was found satisfactory.



During the year 29 lists of outworkers were received, seven employers having sent in their lists in February and August, as required by the Factory and Workshop Act, 1901, and 15 employers only once. Included in the lists were the name and address of an outworker residing in another town, and this, in accordance with the requirements of the Act, was forwarded to the Local Authority of the District concerned. In only one case was any contravention of the Act found in the 45 outworkers' premises inspected.

21 notices as to insanitary conditions in factories and workshops were received from H.M. Inspector of Factories, 13 of which related to factories (which are visited by the Health Department staff only on receipt of a complaint from H.M. Inspector), and 8 to workshops. Many of the latter had, however, been found and dealt with by the District Inspectors prior to receipt of the complaint. The others received due attention and the necessary works were carried out without having to resort to legal proceedings.

ADMINISTRATION OF THE FACTORY AND WORKSHOP ACT, 1901, IN  
CONNECTION WITH FACTORIES, WORKSHOPS AND WORKPLACES,  
DURING THE YEAR 1933.

**Home Office Tables.**

1.—INSPECTION OF FACTORIES, WORKSHOPS AND WORKPLACES.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS.

PREMISES. (1)	NUMBER OF		
	Inspections. (2)	Written Notices. (3)	Occupiers Prosecuted (4)
Factories..... (Including Factory Laundries.)	285	332	...
Workshops ..... (Including Workshop Laundries.)	7,521		
Workplaces ..... (Other than Outworkers' premises.)	1,403		
TOTAL .....	9,209	332	...



## 2.—DEFECTS FOUND IN FACTORIES, WORKSHOPS AND WORKPLACES.

PARTICULARS.	NUMBER OF DEFECTS.			Number of Offences in respect to which Prosecu- tions were institu- ted. (5)
	Found.	Re- medied.	Referred to H.M. In- spector.	
(1)	(2)	(3)	(4)	
<i>*Nuisances under the Public Health Acts :—</i>				
Want of cleanliness .....	263	263	...	...
Want of ventilation .....	7	7	...	...
Overcrowding .....	3	3	...	...
Want of drainage of floors .....	1	1	...	...
Other nuisances .....	82	82	...	...
Sanitary accommodation {	insufficient .....	18	18	...
	unsuitable or defective .....	89	87	...
	not separate for sexes .....	14	14	...
<i>Offences under the Factory and Workshop Acts—</i>				
Illegal occupation of underground bake- house (s. 101).....	...	...	...	...
Other offences .....	...	...	5	...
(Excluding offences relating to out- work and offences under the Sec- tions mentioned in the Schedule to the Ministry of Health (Factories and Workshops Transfer of Powers) Order, 1921.				
TOTAL .....	477	475	5	...

\* Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act, 1901,  
as remediable under the Public Health Acts.

### OUTWORK IN UNWHOLESOME PREMISES, SECTION 108.

NATURE OF WORK. (1)	Instances. (2)	Notices served. (3)	Prosecu- tions. (4)
As per Home Office List.....	None.	None.	None.



## TRADES.

Particulars as to the number and nature of the various trades carried on in the workshops of the City:—

TRADES.	Work-shops.	Domestic Work-shops.	Work-places.
Athletic Outfitters, etc. ....	12	...	...
Bacon Curing, Pickles, etc. ....	52	1	2
Bags, Waterproofs, etc. (making and repairing) ...	19	2	2
*Bakehouses ....	290	...	...
Blacksmiths, Plumbers, etc.....	121	...	2
Bouquets and Wreaths (making, etc.) ....	13	...	...
Boots, etc. (making and repairing).....	137	27	...
Dressmaking, Underclothing, etc. ....	259	52	...
Drysalts, Cleaning & Packing Fruit, Tea, etc. ...	33	1	97
Furniture Making, Joiners, etc. ....	222	9	...
Harness, etc. (making and repairing).....	25	...	...
Jewellery, Watches, etc. (making and repairing)...	78	2	...
Laundries ....	19	...	...
Machines and Tools (making and repairing).....	148	3	3
Painters, Engravers, Photographers, etc. ....	89	5	13
Restaurant Kitchens, etc.....	...	...	117
Tailoring, Shirts, etc.....	267	28	...
Miscellaneous ....	109	...	124
TOTALS .....	1,893	130	360

\* Includes 38 " Factory " and 103 " Domestic " Bakehouses.

### Inspection of Council and other Schools.

During the year 181 inspections were made, and at 4 certain defects were found in connection with the sanitary conveniences, etc.

Attention was drawn to the defective or insanitary condition of the " trough " water-closets at two schools. In one case these were repaired and, with regard to the other, a reply was received that provision was being made for the existing conveniences to be replaced by individually flushed water-closets during 1934.

The other defects (which were of a minor character) were remedied on being brought to the notice of the Education Authorities.

### Rag Flock Acts.

There are no manufacturers of rag flock in the City, the principal users being upholsterers and bedding manufacturers, who number 28. Six samples were taken, all of which were



certified to conform to the standard of purity required by the Regulations made under the Act. 75 visits were also made under the Factory and Workshop Act, 1901.

Two informal samples of flock not derived from rags were also obtained and submitted for analysis. These were found to contain much more chlorine than is permitted by the Rag Flock Regulations, 1912, and, being considered unsuitable for filling bedding, an intimation to that effect was sent to the firm concerned.

### **Exhumations.**

One exhumation was carried out under the supervision of the Department during the year, being authorised by Home Office Licence. Re-interment took place in the same cemetery, the operation being carried out in the early morning and conducted in a sanitary and reverent manner.

### **Fertilisers and Feeding Stuffs Act, 1926.**

In pursuance of this Act, 24 visits were made to factories, warehouses, and retail shops where fertilisers or feeding stuffs were prepared or stored for sale, for the purpose of seeing that the requirements were carried out as to the marking of packages, inspection of registers, etc.

Eleven samples of fertilisers were obtained for analysis, mostly informally. Offences were disclosed in 2 cases and each was met by a letter of caution.

### **Merchandise Marks Act, 1926.**

In the administration of this Act, 236 inspections and personal visits were made to shopkeepers, stall-holders, hawkers, etc., in order to ascertain whether imported goods were properly marked with the "indication of origin" required by the Act. Attention was drawn to the requirements of the Act in each case, and, where necessary, there was also left a copy of a printed notice to traders (setting out the principal provisions of the Act). The issue of this notice proves to be useful and advantageous, generally resulting in future compliance with the requirements.

### **Agricultural Produce (Grading and Marking) Act, 1928.**

85 inspections of markets, shops and stores, were made as to the grading and marking of eggs. No contravention of the Regulations was found.



**Conclusion.**

In conclusion, I desire to acknowledge the co-operation and support of the Staff generally and the efficient manner in which their many and varied duties have been carried out during the year.

I am, Sir,

Your obedient servant,

C. RAIMES,

*Chief Sanitary Inspector,*

*Inspector of Common Lodging Houses, etc.*

*Health Department,*

*Town Hall,*

*8th May, 1934.*